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THE VALUE OF PHYSICAL THERAPY IN INTERNAL MEDICINE

GEORGE MORRIS PIERSOL, M.D.

PHILADELPHIA

It may be stated with little fear of contradiction that there is no field of therapeutics less understood and less frequently employed by internists than physical therapy. There are several reasons that account for this unfortunate state of affairs which has its inception in our medical schools. A survey of the curriculums of undergraduate as well as graduate medical courses reveals the fact that, if taught at all, but little time is devoted to the various aspects of physical therapy and that at best the courses available to students of medicine are inadequate and superficial. The average physician, therefore, approaches the practice of medicine knowing little about one of the oldest and most useful branches of therapeutics. Physicians, as a rule, because of their lack of understanding, evince little interest in acquiring a sound working knowldege of physical therapy. Furthermore, the proper application of physical therapeutic methods requires not only time but a certain amount of manual dexterity. Since physicians have been loath to give of the former or to acquire the latter, the field of physical therapy has been neglected by the medical profession.

Gradually the various procedures that are embraced in this form of therapeusis have been delegated to technicians who not only have acquired skill in carrying out such measures but have been allowed to usurp the actual prescribing and direction of this type of therapy. The lack of appreciation on the part of the medical profession of the value of physical therapy and its disinclination to devote the time and study necessary to master the basic principles which underlie it have been major factors in affording opportunity for cultists to develop and monopolize this field. The public has long been aware of the value of physical therapeutic methods. It is unfortunate that the profession should have turned a deaf ear to this popular demand, thereby allowing less orthodox and less scientifically trained groups to become aggressively active in a field which should be and should always have been under the control and domination of qualified physicians.

The first step toward correcting this situation is to revise our educational methods as far as physical therapy is concerned. Students of medicine, undergraduates and graduates, as well as interns and residents, should be taught that in the field of therapeutics in its broadest sense, physical methods occupy a recognized position of importance. To many the term "physical therapy" conjures up a picture of elaborate apparatus and expensive paraphernalia. Such a conception is both erroneous and discouraging. It should be emphasized that, basically, physical therapy is founded on procedures that are relatively easy, that are readily available and that require for their proper application not elaborate equipment but a thorough understanding of their underlying physiology and their proper uses and limitations.

In this discussion, no attempt will be made to deal with such highly technical subjects as electrotherapeutics and radiation therapy. Such procedures should not be so generally available, since their safe and proper application requires adequate special training. An effort will be made to emphasize those physical therapeutic procedures concerning which all physicians should have sufficient working knowledge to supervise and direct their use intelligently, even though they lack the personal skill to carry them out. This category embraces massage, exercise, the application of heat and hydrotherapy.

MASSAGE

Among the oldest, best known and most frequently employed forms of mechanotherapy is massage. In view of this, it is the more remarkable that physicians as a whole possess so little understanding of the effects of massage and the methods of application. Pemberton [1] emphasizes this in his statement "There is probably no other measure of equal known value in the entire armamentarium of medicine which is so inadequately understood and utilized by the profession as a whole." Since few physicians are capable of directing the proper application of the various technics of massage, in this country at least, the task is delegated to lay technicians who, for lack of expert guidance, more often than not decide on the form of massage to be used as well as the duration and frequency of its application. Responsibility for all forms of therapy is definitely the physicians'. It is as unjustifiable for them to shift that responsibility to a physical therapy technician, no matter how well trained, in the case of massage, as it would be for physicians to delegate the details of drug therapy to a druggist.

In spite of the work of Pemberton,[2] Coulter,[3] Mennell [4] and others who have studied with modern methods the physiologic effect of massage, much remains to be done to bring about a complete understanding of the basic principles of this subject. Pemberton and his associates have shown that even after vigorous massage there is no production of lactic acid in the muscles, and consequently the acidosis characteristic of exercise is not

Read before the Section on Practice of Medicine at the Ninety-Second Annual Session of the American Medical Association, Cleveland, June 6, 1941.

1. Pemberton, Ralph: Physiology of Massage, in Handbook of Physical Therapy, ed. 3, Chicago, American Medical Association Press, 1939, pp. 78-87.

2. Mock, H. E.; Pemberton, Ralph, and Coulter, J. S.: Principles and Practice of Physical Therapy, Hagerstown, Md., W. F. Prior Company, Inc., 1934, vol. 1, chap. 6.

3. Coulter, J. S., in Cyclopedia of Medicine, Surgery and the Specialties, edited by G. M. Piersol and others, Philadelphia, F. A. Davis Company, 1933, vol. 8, pp. 5-98.

4. Mennell, J. B.: Physical Treatment by Movement, Manipulation and Massage, Philadelphia, P. Blakiston's Sons & Co., 1933, p. 61.

present. They were unable to demonstrate that massage brought about the loss of lactic acid and alkalosis that accompanies the application of external heat. They believe that the important effect of massage on the circulation is different from that induced by exercise or the local application of heat and is to be explained on the basis of the effect which even mild stroking has on the capillary bed, as demonstrated by Krogh.[5] The dilatation that follows light pressure is transitory, but heavier pressure causes more extensive and persistent widening of the capillaries. Direct observation on the capillary circulation indicates that massage causes an increased rate of blood flow and changes in the vessel walls, followed by an increased interchange of substances between the blood and tissue cells and consequent improvement in metabolism.

The mechanical effect of massage on the return flow of the venous blood and lymph to the heart has long been recognized. This effect is especially obvious in the presence of edema that can be favorably influenced by even light centripetal stroking. The therapeutic application of this fact has been utilized in the treatment of local edema of traumatic origin but has not been taken advantage of in the management of edema due to general causes. Since by pressure fluids can be displaced from the subcutaneous tissues, it would seem that massage might play a useful role as an adjunct in the relief of edematous states.

It was shown by John K. Mitchell[6] that massage increases the number of red blood cells and the amount of hemoglobin in the circulating blood. This effect was observed not only in health but in anemic states. These conclusions were confirmed by subsequent observers.

The effect of massage on the nervous system varies according to the type of massage employed, its intensity and duration. Properly applied massage may cause either a sedative or a stimulating effect.

It is generally believed that heavy massage is capable of reducing local deposits of fat. Clinical and experimental evidence show this to be a popular misconception. There are no scientific data to support the contention that massage ever removed collections of adipose tissue from various parts of the body. A similar misunderstanding exists in the minds of those who believe that massage will strengthen muscles. There is general agreement that massage does not increase muscular strength, which can be brought about only by active exercise.

Contrary to what might be expected, it has been shown that massage has little effect on general metabolism. Many observers have noted a definite increase in the output of urine. No disturbance of the acid-base equilibrium of the blood has been recorded, nor is the consumption of oxygen influenced by massage. After a careful review of the subject, Pemberton comes to the conclusion that "the cumulative effect which massage exercises on various metabolic processes probably lies in the mechanical influence on the circulation of the parts concerned."

The diseases in which massage is indicated are for the most part of a chronic nature, since the therapeutic effect of massage is brought about slowly as the result of repeated use over a long period of time. Therefore massage has a limited field of usefulness in acute conditions that run a short course. It has its greatest value in chronic states that involve long periods of inactivity which bring about atrophy of muscular tissue. Under such circumstances massage helps to prevent further atrophy, aids in the absorption of exudates and toxic waste products and restores normal physiologic processes in the masses of muscle. When to these effects are added the influence of proper massage on the nervous system, it is easy to understand why massage has become an indispensable aid in arthritis and allied rheumatic conditions as well as in fibrositis and other muscular derangements. It is almost equally useful in long-continued convalescence, in functional nervous disorders and in asthenic states often included in the term "neurasthenia." The possible value of massage in certain secondary anemias has already been referred to. The helpful effect of suitable upward stroking on the venous return flow and in increasing the absorption of edematous fluid into the circulation suggests that in certain stages of chronic cardiac failure massage could be used to advantage to help restore circulatory equilibrium and relieve edema, a fact which has been generally overlooked. There are few medical conditions for which, at some time, massage has not been advocated, often with little or no sound basis. Like all forms of therapy, it has its definite indications as well as its contraindications with which internists should be thoroughly familiar.

EXERCISE

It is generally admitted that the proper kind and amount of physical exercise is essential for the maintenance of good health. In this country during the past fifty years the trend in exercise has been toward less formal gymnastics, more sport activities and a decided increase in the employment of corrective exercise.

Physicians should acquaint themselves with the indications for and the possibilities of the various types of exercise; they should know how and when to prescribe them and be willing to supervise their application. This is especially true of corrective exercise, a valuable form of physical therapy that is too much neglected. The physician is prone to think of exercise as a means of increasing muscular strength rather than as an aid in restoring normal function.

The mechanism of muscular contraction is still not entirely clear. Muscular work causes the expenditure of energy. How this energy has been produced has been a subject of much investigation. The fundamental work of Fletcher and Hopkins[7] has shown that, when a muscle contracts, glycogen, which is present in muscles in large amounts, disappears, lactic acid accumulates and carbon dioxide is driven off. The reaction of the muscle then becomes less alkaline because of increasing amounts of carbonic acid and lactic acid. This series of chemical changes which bring about the liberation of energy which enables muscles to contract requires no oxygen. The whole process is referred to as the contractile phase of muscular contraction. The accumulation of lactic acid causes a cessation of muscular movement, and for further muscular effort additional changes must take place which are dependent on oxidation and are known as the recovery phase of muscular contraction. In this phase, in the presence of adequate oxygen, the lactic acid disappears, glycogen reaccumulates and the muscles return to a state of alkalinity. If muscular effort is to be continued, large amounts of oxygen must be available. It has been shown that an individual doing hard muscular work will require ten times more oxygen than is needed when he is at rest. This increased oxygen requirement is met by com-

5. Krogh, August: Anatomy and Physiology of the Capillaries, ed. 2, New Haven, Conn., Yale University Press, 1929.
6. Mitchell, J. K.: Am. J. M. Sc. **107**: 502, 1894.
7. Fletcher, W. M., and Hopkins, F. G.: J. Physiol. **35**: 247-309, 1906-1907.

pensatory changes in the circulation and in respiration brought about by a greater volume of breathing and increased circulation of the blood. Therefore, during exercise there is an increased pulse rate, a larger output of blood, an elevated blood pressure and a more rapid respiratory rate. These vary with the rapidity, severity and duration of the muscular effort according to the degree of training of the person.

The surgeons, orthopedists and neurologists have taken advantage of the therapeutic value of exercise to a greater extent than have internists. Nevertheless, there are certain conditions that constantly come under the observation of physicians which can be greatly benefited by the employment of appropriate exercises. It has been frequently observed that the commonest defect noted among the people of this country is faulty posture with its resultant incorrect body mechanics. The far reaching, harmful effects of poor posture as well as its influence on various disease conditions and on the morale and psychology of patients is too well known to require elaboration. A better understanding on the part of physicians in general of the results of postural strain and faulty body mechanics, coupled with an intelligent knowledge of the therapeutic exercises necessary to overcome such conditions, would better enable them to restore the physical and mental well-being of many a patient, a task which today must too often be turned over to technicians or to those who have become the advocates of certain special schools of mechanotherapy.

Internists might well be more alive to the value of certain forms of exercise in the treatment of cardiac disease. Years ago, the Irish clinician Stokes advocated exercise, particularly mountain climbing, for certain types of heart disease. Later such exercises were put on a more systematic and scientific basis by Oertel. Today the Stokes-Oertel graduated hill-climbing exercises for selected cardiac patients are recognized as an effective form of therapy which, however, is largely overlooked by clinicians and rarely employed except in well regulated health resorts. Another form of exercise of undoubted value in many cardiac conditions was introduced by August and Theodore Schott of Nauheim. They developed resistance exercises, regulated movements that could be carried out by trained attendants with little exertion and no fatigue on the part of the patient. That all such exercises should be carefully controlled and immediately stopped on the appearance of any symptoms of cardiac fatigue such as dyspnea, palpitation, precordial distress or undue exhaustion is axiomatic. In the presence of decompensation, rest is obviously essential, but many cardiac patients are forced into states of invalidism because rest and the avoidance of all forms of exertion are insisted on unnecessarily.

There are few persons who cannot derive benefit from properly regulated and suitable voluntary free exercise. Careful judgment should be shown in prescribing exercises for middle aged and older persons, particularly those who are suffering from early and often symptomless cardiovascular disturbances. Serious harm, at times even death, has resulted from a physician casually telling such patients that they need exercise without specifically prescribing the character and the amount. The tragedies of the handball and tennis courts and the golf course bear eloquent testimony to this fact. Lack of time or interest are the chief reasons that prevent the busy practitioner from specifically prescribing suitable exercises. This difficulty may be overcome by having on hand printed instructions for a set of simple exercises that may be given patients, with modifications and restrictions suited to their needs, or, as Coulter has suggested, by making available to such patients one of the useful handbooks on exercise that have been published under the direction of the Council on Physical Therapy of the American Medical Association.

EXTERNAL HEAT

One of the most valuable physical therapeutic measures available is the application of external heat, which may be general or local. Although the systemic use of external heat has been employed for many years, it is only recently that the value of the artificial production of an increase in bodily temperature or "fever therapy" has been fully appreciated. The fever produced is the result of creating by physical means a disproportion between heat production and heat dissipation. The production of artificial fever may be brought about by various methods; from such comparatively simple procedures as hot tub baths and hot packs to the most complicated forms of heat cabinets. Artificial fever therapy is a major procedure which should be carried out only by those thoroughly familiar with its various aspects and in suitable institutions. It would be inappropriate to consider here the technic of fever therapy. The procedure is obviously a heroic one, and patients who are subjected to it should be selected with the greatest care and, as Krusen [8] has pointed out, should be conditioned both physically and psychologically for the ordeal of enduring prolonged high fever therapy. Although the possibilities of this form of therapy are great, it obviously has limited application. After a careful analysis of the literature, Krusen found that fever therapy had been employed for more than fifty diseases, in the majority of which it has proved of little value. It has been found of distinct advantage in syphilis, particularly in syphilis of the central nervous system. Gonorrhea and its complications, atrophic arthritis, undulant fever, rheumatic fever, intractable bronchial asthma and some forms of neuritis have shown a favorable response to this form of therapy. Most recently encouraging reports have come from the Mount Sinai group in New York of the results of fever therapy in subacute bacterial endocarditis when the treatment is fortified by chemotherapy and repeated blood transfusions.

The general application of heat is by no means limited to the production of prolonged artificial fever. It is much more often employed to bring about various degrees of sweating. To accomplish this, the various forms of cabinets used for fever therapy may be employed. The best known methods are the use of hot packs of various kinds, steam baths, hot room and cabinet baths. The heat, whether it is dry or moist, thus applied is maintained for only a short time, not more than thirty minutes even when free sweating is to be induced. Whatever rise in body temperature occurs is but slight and transient.

Popular faith in the ability of sweat baths to eliminate poisonous waste products and to reduce weight has given this form of therapy great vogue among the laity, which is too prone to indulge in it without medical supervision or approval. Devices for inducing sweats form an important part of all physical therapeutic establishments and are the basis for the Turkish bath.

It is unnecessary to dwell on the danger of this form of therapy when it is practiced to excess or unsupervised or by those whose physical condition contraindi-

8. Krusen, F. H.: Physical Medicine, Philadelphia, W. B. Saunders Company, 1941, p. 45.

cates its use. Patients become conscious of palpitation and a feeling of fulness and a throbbing in the peripheral vessels. Syncope may occur, especially in those who are sitting erect in cabinets; for that reason it is best to give such treatments with the subject recumbent. If sweating is profuse and prolonged, dehydration and hyperventilation bring about alkalosis. In many instances there is a decrease in the serum chlorides. The blood urea, uric acid and creatinine are little if at all affected; the same is true of the non-nitrogenous constituents of the blood. The loss of weight following prolonged sweating is rarely excessive, is of short duration and is due to dehydration. To offset the dehydration with its attendant loss of electrolytes, adequate amounts of water and in some instances sodium chloride should be administered during the sweat.

Diaphoresis brought on by the general application of heat is at times of value in selected cases of arthritis, fibrositis and allied conditions as an adjunct to other forms of therapy. As a method of promoting loss of weight, unless combined with exercise and dietetic restrictions, it is of little value. Formerly it was extensively employed in acute and chronic glomerular nephritis in which there was nitrogen retention and threatened renal toxemia. Since, as indicated, the application of external heat brings about loss of water and of sodium chloride without influencing to any noteworthy extent the nonprotein nitrogen of the blood, there is some question as to its value in impending uremia, and the use of sweats in renal diseases has lost much of its earlier favor.

LOCAL APPLICATION OF HEAT

The local application of heat constitutes one of the commonest procedures in medicine, readily available and frequently applicable. There are three well recognized methods by which heat is locally applied to the body: 1. Conduction, when it is applied by direct contact from a heated object such as a hot brick, a hot water bag or an electric pad. 2. Convection, when the heat is applied to the surface of the body from some external source such as heated lamps, coils or reflectors. 3. Conversion, in which heat is developed in the tissues of the body by reason of the resistance which they offer to the passage of a high frequency current (diathermy).

The physiologic effects of local applications of heat differ but little whether conductive, convective or conversive heat is used, with the exception that the former is least penetrating and the latter produces the greatest amount of penetration. When heat is locally applied, the blood vessels dilate, the rate of blood flow increases, as does the transfer of fluid from the blood to the tissue. This acceleration in blood flow interferes with local rise in temperature by distributing the heat throughout the body. Local heat tends to produce an alkalosis and to increase local metabolic activity and possibly phagocytosis.

The methods employed for applying heat locally are numerous and include devices that depend on heated air, chemical heat, electrically heated applicators, heated solids and semisolids such as mud and paraffin and water heated applicators.

The indications for the use of local heating are many and are essentially similar whether the heat used is of one kind or of another. Among the conditions for which local heat is recommended, again arthritis and rheumatic states come first. It has been used in many inflammatory conditions, especially pelvic, as well as in traumatic conditions and in peripheral vascular disease.

LIGHT

Closely allied to the therapeutic use of heat is that of light. In recent years there has been an ever increasing interest in the use of ultraviolet, visible and infra-red rays in the treatment of innumerable diseases. The subject has become so involved and highly technical and so much controversy exists over many of its important aspects that it seems futile to attempt to epitomize it in this limited presentation. The physiologic actions and indications for use of the visible and infra-red rays differ but little from those already discussed under the general and local application of heat. This is not true of ultraviolet radiation which, although it has been recommended for a large number of diseases in which it does no particular good, is nevertheless almost specific in rickets and tetany and of acknowledged merit in many cutaneous diseases and in calcium and phosphorus deficiency states. The empiricism that has been so conspicuous in light therapy must give place to more accurate scientific knowledge of the dosage of light radiation, the relative value of the innumerable types of therapeutic lamps and their proper application. It is gratifying to note that through its researches, the Council on Physical Therapy is doing outstanding work in the standardization of light therapy. The value of light radiation is undeniable, but it is not without its dangers, which should be more fully appreciated. Its indiscriminate use by those who know little of its physiologic effects should be controlled.

HYDROTHERAPY

Water in any of its forms is one of the most generally useful and easily available therapeutic agents. For centuries it has proved a valuable adjunct in the treatment of disease, yet among the medical profession hydrotherapy no longer enjoys the popularity it was once accorded.

It is a most flexible therapeutic agent which, as Krusen aptly puts it, "can be variously modified from the solid form (ice) to the liquid form, to the gaseous form (steam)." According to Baruch, who did so much to popularize this form of therapy in America, hydrotherapy in the broad sense includes the application of water in any and all of its various forms.

The stimulating, tonic and sedative effect of baths of varying temperatures and different mechanical forms is generally understood and needs no detailed discussion. There are, however, several aspects of hydrotherapy of particular interest to physicians.

The neuropsychiatrists have long appreciated the value of prolonged tepid or warm baths in the control of various maniacal states. A lesson could be learned from their experience, and hydrotherapy might be resorted to more often in the management of many forms of excitement and insomnia instead of overwhelming such patients with sedative drugs.

The chief physiologic effect of applying water to the body is to cause changes in temperature. This fact furnished a basis for the use of cold baths in the control of fever. The best example of this is the Brand bath or some of its modifications which did much to revolutionize the treatment of typhoid in the days when that infection was epidemic. The Brand bath is no more specific for typhoid than for any other infection characterized by long-continued fever and toxemia. Its effect is not primarily to reduce a rise in temperature so much as to improve the vasomotor tone, lessen the pulse rate, increase the blood pressure and control the nervous manifestations of the "typhoid state."

Medical baths have long enjoyed a curative reputation in many conditions. Whether the good results often recorded are due as much to the minerals in solution as to the effects of the water itself is a much debated subject. Among medicated baths the effervescing ones that contain nascent carbon dioxide, such as are found at Nauheim and elsewhere in Europe, are the best known and most useful. To obtain the benefits of such baths, it is no longer necessary to go to the spas where they occur in nature, since effective carbon dioxide baths can be readily prepared artificially. In certain types of cardiac disease, especially those in which there still remains a reasonable amount of cardiac reserve, the Nauheim bath if properly given and accompanied by suitable rest and exercise has proved of undoubted value. Here again is a form of hydrotherapy largely lost sight of which is capable of being of considerable clinical help to physicians.

It must be pointed out that the effectiveness of all forms of physical therapy may be greatly increased by the proper and intelligent combination of several procedures. Nowhere is this better exemplified than in the S. Weir Mitchell "rest treatment," in which the desired results were obtained by the combined use of rest, massage, exercise and hydrotherapy in conjunction with hypernutrition.

An essential and important adjunct to all forms of physical therapy is rest. The value of massage, exercise, heat and bathing is greatly enhanced when combined with adequate rest and relaxation and conversely is decidedly lessened when rest is neglected and states of fatigue are allowed to occur. This should not be lost sight of when physical therapeutic measures are employed. The physician should insist that they be carried out in a quiet, orderly fashion and that ample time be set aside for the rest by which they should be followed.

COMMENT

An effort has been made to stress certain methods of physical therapy that are based on sound physiologic principles, that are of acknowledged value and proved usefulness, that are readily available to all physicians and for the most part can be carried out with little difficulty even in the home. By so doing it is hoped that the interest of physicians in general, but those concerned in internal medicine in particular, may be revived in the far reaching possibilities of this broad therapeutic field. If physical therapy is to remain under the control of physicians and advance as it should along sound scientific lines, the indifference which the internists as a group have displayed in the past must give way to an active interest in developing a constructive, forward looking policy to improve the practice of and extend education in physical therapy.

2031 Locust Street.

ABSTRACT OF DISCUSSION

DR. JOHN S. COULTER, Chicago: It is gratifying to hear an internist comment favorably on the use of physical therapy. The Council on Physical Therapy of our association is trying to interest physicians to use simple physical agents in their practice. It is doing this by publishing articles in THE JOURNAL and through the Handbook on Physical Therapy, the fourth edition of which is now being prepared. This council is cooperating with the Council on Medical Education and Hospitals to increase the number of medical schools giving courses in physical therapy. One reason internists do not use physical agents in the treatment of patients as often as they should is that they feel sometimes that the expense is too great. In treating chronic diseases in which physical therapy is indicated, if physicians will arrange a home program of treatment the patients will receive benefits from physical therapy that they would not otherwise. In the use of heat and massage to increase peripheral circulation or exercise to correct posture and increase muscle strength it is not enough to send a patient to a physical therapist once a day and expect to receive the maximum benefits. In treating such a disease as chronic arthritis with physical therapy it is advisable to instruct the patient or some member of the family to use physical therapy at home two or three times a day, in addition to the patient's visiting the physical therapy department. We recommend the use of simple agents, and the Council on Physical Therapy will be glad to send physicians designs for making many things, such as the home made electric lamp baker and exercise apparatus, so that physical therapy can be used without great expense and a home program of treatment established. I too want to emphasize that instructions for the use of physical agents must be carefully given. The instructions for home treatment should be as definite as for drug therapy. Mimeographed instruction sheets should be used for this purpose, and the Council will send, on request, samples of the instruction sheets that are used. In the present emergency the National Research Council has appointed a subcommittee on physical therapy to cooperate with and to advise the Surgeon Generals of the Army and the Navy, the Veterans Administration and the Public Health Service in the use of physical therapy in government hospitals. We hope there will be the same use of good physical therapy in this emergency as there was in the last.

DR. RALPH PEMBERTON, Philadelphia: I want to express satisfaction as an internist with this paper by Dr. Piersol, which seems to me to be timely. I have observed the physical therapeutic scene for many years, and from the standpoint of one interested in the influence of physical therapy on normal physiologic processes as well as on pathologic processes I have been amazed at the extraordinary neglect which we internists have accorded to this field. Dr. S. Wier Mitchell, who was fifty years ago one of the best clinicians and one of the best physiologists in the country, laid down principles in the use of physical therapy which have been followed to this day by the neurologists, by orthopedists and by others. But for some peculiar reason we internists have not taken cognizance of the effects which physical therapy will bring about, and by that I mean chiefly heat, massage, rest and exercise. It is also worthy of note that Jack Mitchell showed, forty years ago, that it is possible to increase the peripheral red cell count in some of the anemias by means of massage. Doubtless there are limitations to the extent to which anemia patients and perhaps cardiac patients should be subjected to such measures, but it is fair to say that there is enough of a nucleus of truth to justify the view that internists should utilize the influence of these factors more widely than they are now doing. Perhaps the most significant lesson to be deduced from Dr. Piersol's paper is the fact that he is speaking as vice dean for medicine of the Graduate School of the University of Pennsylvania, and I hope that his remarks will be regarded as a plea for more widespread instruction, undergraduate as well as graduate, in the principles of physical therapy.

DR. GEORGE MORRIS PIERSOL, Philadelphia: Dr. Pemberton has referred to the question of teaching physical therapy. Personal experience would indicate that the most difficult course to organize for graduate students in medicine is the one in physical therapy. You may comb a great metropolitan center and still find little available material to give students a constructive course along this line. The importance of the whole question of exercise and posture—Dr. Coulter has already stressed that—is evident to any one who has an opportunity to examine draftees for the Army. As a nation, faulty posture is one of our outstanding shortcomings. Among those nations in which mass exercise has been in vogue for many years the youth, instead of adopting the poor posture with which we are familiar, have acquired good posture and consequently are better prepared for military and similar services. Again it must be emphasized that all procedures in physical therapy, including those used in heart disease, must be looked on as adjuncts; not intended to replace well recognized forms of therapy, but as useful aids to them which, if employed more often, would tend to shorten convalescence and increase the well being of patients not only physically but also psychologically.

PNEUMONIA IN CHILDREN

A REVIEW OF SEVEN HUNDRED AND THIRTY-ONE CASES

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A review of pneumonia in 731 children entering Cook County Hospital from April 1939 through May 1940 has enabled us to collect valuable data and make numerous observations on a disease which has recently held the limelight because of new trends in therapy. In view of the type of patients who frequent such a hospital (all are indigent and many are malnourished children in the late stages of the disease) this has been a severe test for the efficacy of drug therapy.

The original plan of the pneumonia service[1] was to have a control series of patients receiving nonspecific therapy and a comparable group receiving specific serum or chemotherapy, but by the time sulfapyridine became available in sufficient quantities (April 1939) there had been satisfactory reports, experimental[2] and clinical,[3] to warrant the use of the drug. It was deemed unwise to withhold specific therapy from acutely ill patients for the sake of statistics. The plan was therefore changed so that patients were treated according to the severity of the disease without any attempt to establish a control group. During the fourteen months of observation, 731 children from 1 to 13 years of age were studied and treated; only those with definite physical, laboratory and roentgen evidence of pneumonia were considered in this group.

PROCEDURE

Every child entering the Cook County Hospital for whom a diagnosis of pneumonia was made or suspected was referred to a special resident in charge of the pneumonia service. The resident confirmed the diagnosis and immediately (or, if the patient entered during the night, early the next morning) collected sputum for typing. Early in the series, sputum was collected by direct laryngoscopy; later satisfactory specimens were obtained from the lower part of the pharynx by gagging the patient with a tongue depressor. The mucopurulent material was collected on sterile swabs, placed in sterile test tubes and immediately taken to the nearby diagnostic laboratory of the Department of Health of the State of Illinois for typing and culture.[4]

Blood cultures, complete blood counts, urinalyses and roentgenograms of the chest were ordered immediately.

For all severely ill children who were suspected of having or who definitely had pneumonia, treatment with sulfapyridine was instituted as soon as the clinical diagnosis was made, usually before the bacteriologic diagnosis was made. Those who later were shown not to have pneumonia were dropped from the series. Of the 731 children admitted with a diagnosis of pneumonia, 656 (87.1 per cent) received sulfapyridine, 19 (2.6 per cent) received serum in addition to the drug and 75 (10.2 per cent) received no specific medication because they were moribund or convalescent on admission.

The usual dose of sulfapyridine was 1½ grains (0.1 Gm.) per pound of body weight on the first day and ¾ to 1 grain (0.04 to 0.06 Gm.) per pound on subsequent days. Children over 6 years of age received somewhat smaller doses, but at least 1 grain (0.06 Gm.) per pound the first day and ½ grain (0.03 Gm.) per pound on subsequent days. The first two doses were larger (almost half of the calculated twenty-four hour requirement) than the following doses, in order rapidly to build up the concentration.

Fluids given parenterally, inhalations of oxygen and blood transfusions were administered freely when symptoms indicated their use. Specific antipneumococcus rabbit serum was given intravenously to patients not responding satisfactorily to chemotherapy after twenty-four to forty-eight hours of treatment.

TABLE 1.—*Age, Sex and Race Distribution in Seven Hundred and Thirty-One Cases of Pneumonia—Cook County Children's Hospital, April 31, 1939 to May 31, 1940*

	Lobar Pneumonia—399 Cases			Bronchopneumonia—332 Cases		
Age, Years	1-2	2-4	Over 4	1-2	2-4	Over 4
White boys	20	29	95	37	27	32
Negro boys	15	22	55	29	18	12
White girls	19	18	63	46	23	31
Negro girls	12	21	30	30	28	19
Total	66	90	243	142	96	94

TABLE 2.—*Bacteriologic Types of Organisms*

Organism	Number of Cases	Percentage
Pneumococci	572	....
Single strain	461	63.0
Mixed strain	108	14.7
Unclassified	3	0.4
Streptococci, staphylococci and others	126	17.2
No specific organism	23	3.1
Not examined	10	1.3
Total	731	99.7

TABLE 3.—*Relation of Pathologic Process to Bacteriologic Type of Organism*

	Type of Pneumonia			
	Lobar		Bronchial	
Organism	No. of Cases	Percentage	No. of Cases	Percentage
Single strain pneumococci	285	59.5	195	40.5
Mixed strain pneumococci	53	50.0	52	50.0
Streptococci, Staphylococci and others	64	47.0	72	53.0
Unclassified	7	87.5	1	12.5
Not examined (2)	..	....	..	....

From the pneumonia service of Dr. Butler and Dr. Hoffman.

From the Cook County Children's Hospital and the Departments of Pediatrics of Rush Medical College, the University of Illinois College of Medicine and the Cook County Graduate School of Medicine.

1. Dr. Maurice L. Blatt, chief of staff, Cook County Children's Hospital, instituted a special pneumonia service to be supervised by Drs. Butler and Hoffman.

2. Whitby, L. E. H.: Chemotherapy of Pneumococcal and Other Infections with 2-(p-Aminobenzenesulfonamido) Pyridine, Lancet **1**: 1210-1212 (May 28) 1938.

3. Evans, G. M., and Gaisford, W. F.: Treatment of Pneumonia with 2-(p-Aminobenzenesulfonamido) Pyridine, Lancet **2**: 14-19 (July) 1938. Barnett, H. L.; Hartmann, A. F.; Perley, Anne M., and Ruhoff, Mary B: Treatment of Pneumococcic Infections in Infants and Children with Sulfapyridine, J. A. M. A. **112**: 518-527 (Feb. 11) 1939. MacColl, W. A.: Clinical Experience with Sulfapyridine, J. Pediat. **14**: 277-289 (March) 1939.

4. Dr. H. S. Shaughnessy, chief of laboratories of the Department of Health of the State of Illinois, and his staff aided in the bacteriologic studies.

ANALYSIS OF DATA

Of the 731 children studied, 54 per cent were boys and 46 per cent girls; 60 per cent were white and 40 per cent Negro. The racial incidence was in direct proportion to the total admissions to the hospital. It

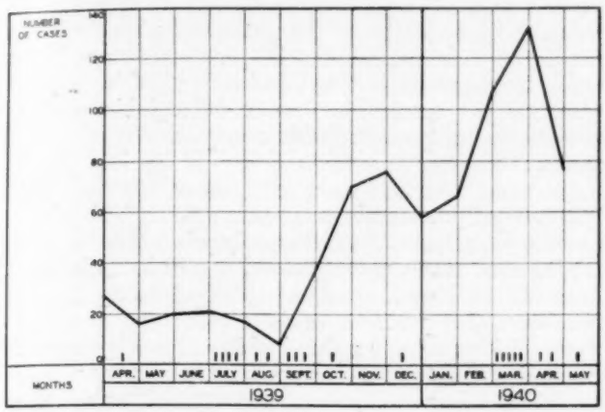

Chart 1.—Monthly incidence of pneumonia, April 1939 to May 1940.

was of interest to note, however, that only 20 per cent of the deaths occurred in Negro children.

Diagnosis of lobar pneumonia and bronchopneumonia was made as accurately as possible by physical examination and roentgen studies. Forty-five per cent of the patients were classified as having bronchopneumonia and 55 per cent as having lobar pneumonia. Sex and race bore no relation to the incidence of the disease (table 1), but the expected variation with age occurred. In the group aged 1 to 2 years 68 per cent had bronchopneumonia, while in the group over 4 years of age 72 per cent had lobar pneumonia.

There was a pronounced variation by months in the number admitted to the hospital. The greatest number of patients with pneumonia were admitted in March and April 1940 and the fewest in the summer months of 1939 (chart 1). Studies on the mortality revealed that approximately 50 per cent of the deaths occurred from July to October 1939 (inclusive), when only 11 per cent of the patients were admitted.

In approximately 78 per cent of the cases there were pneumococci in the laryngeal swab. Other organisms,

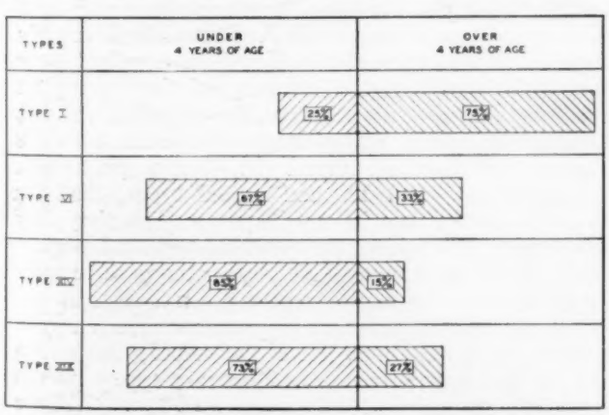

Chart 2.—Age distribution of most prevalent types of pneumococcic pneumonia.

notably streptococci and staphylococci, were identified in 17 per cent, while in approximately 5 per cent no bacteriologic diagnosis was made (table 2).

An attempt was made to associate the bacteriologic with the pathologic types of pneumonia. In approximately 60 per cent of the cases of pneumococcic pneumonia the involvement was lobar, and in 40 per cent it was bronchial, while in 47 per cent of the cases of non-pneumococcic pneumonia the involvement was lobar and in 53 per cent it was bronchial (table 3).

As has been pointed out in other reports, the types of pneumococci most common in cases of pneumonia in children differ from those most frequently associated with pneumonia in adults. In our study, the four types of pneumococci most frequently recovered were types I, VI, XIV and XIX; together they accounted for 45 per cent of the cases of single strain pneumococcic pneumonia or for 28 per cent of the entire series. The incidence of the various types is shown in table 4.

TABLE 4.—*Types of Single Strain Pneumococci (in Order of Frequency)*

Type	Number of Cases	Percentage	Type	Number of Cases	Percentage
I	62	13.4	XIII	9	1.9
VI	61	13.2	XXI	9	1.9
XIV	48	10.4	VIII	8	1.7
XIX	36	7.8	X	6	1.3
V	30	6.5	XVI	6	1.3
IV	29	6.3	XI	5	1.6
VII	25	5.4	XVII	5	1.0
III	18	3.9	XXII	4	0.86
XXIII	18	3.9	XXIX	3	0.65
XV	17	3.7	XXXI	3	0.65
II	12	2.6	XXIV	2	0.43
XVIII	11	2.3	XII	1	0.21
XXXIII	11	2.3	XXV	1	0.21
XX	10	2.1	XXVII	1	0.21
IX	9	1.9	XXVIII	1	0.21
			Total	461	99.23

TABLE 5.—*Relation of Pathologic Process to Most Frequent Types of Pneumococci*

Type of Pneumococci	Type of Pneumonia: Lobar, Number of Cases	Lobar, Percentage	Bronchial, Number of Cases	Bronchial, Percentage
I	46	79.3	12	20.7
VI	29	50.0	30	50.0
XIV	35	70.0	16	30.0
XIX	16	46.0	19	54.0
VII	23	92.0	2	8.0
XX to XXXIII	25	39.0	39	61.0

TABLE 6.—*Incidence of Otitis Media*

Type of Organism	Number of Cases
Pneumococci	
Type XIV	8
Type VI	5
Type XIX	4
Type XVIII	4
Type I	2
Type XXXIII	2
Mixed types	15
Streptococci, Staphylococci and others	10
No organism recovered	3
Total	53 (7.4%)

Pneumococci of types I, II, III, VII and XIV were found most frequently in cases of lobar pneumonia, while types above XX predominated in cases of bronchopneumonia. Pneumococci of types VI and XIX were found with equal frequency in cases of lobar pneumonia and of bronchopneumonia. The percentages of the types of pneumococci are correlated with the existing pathologic process in table 5.

There was a distinct relationship between the strain, or type, of pneumococcus and the age group. Type I was found most frequently (chart 2) in the older age group (in which 75 per cent of the patients were over

4 years of age and approximately 80 per cent had lobar pneumonia). Type XIV was definitely associated with the younger age group (85 per cent of the patients were under 4 years of age); one would therefore expect bronchopneumonia to predominate in type XIV pneumococcic infections, whereas in 69 per cent of our cases

TABLE 7.—*Incidence of Empyema*

Type of Organism	Number of Cases
Pneumococci	
Type I	18
Type V	2
Type VI	2
Type XIV	1
Staphylococci	3
Streptococci	2
Nonclassified	1
Total	29 (4% of 731)
Deaths from empyema	4 (14% of 29)

TABLE 8.—*Sulfapyridine Treatment*

Average dose required to reduce temperature to normal	3.21 Gm.
Average total dose for duration of disease	6.17 Gm.
Average duration of fever after starting of medication	21.6 Hr.
Normal temperature 12 hours after medication	34%
Normal temperature 24 hours after medication	66%
Normal temperature 48 hours after medication	95%

the involvement was classified as lobar. Approximately two-thirds of the patients with type VI and type XIX pneumonia were under 4 years of age and were equally divided among those with bronchopneumonia and those with lobar pneumonia.

Of the 731 cases under observation, cultures of blood obtained on admission were positive in only 32, or 4 per cent. Nine cultures revealed type I pneumococci, 7 staphylococci, 6 type XIV pneumococci, 3 streptococci, 2 type V, 2 type XXXIII, 1 type IV, and 1 type VII pneumococci, and 1 an unclassified pneumococcus. Many patients showed definite clinical evidence of sepsis, but 17 with positive blood cultures had no symptoms of bacteremia and were discharged from the hospital within eight days after admission.

TABLE 9.—*Deaths*

	Number of Cases
Deaths in first 24 hours	9
Deaths during treatment	9
Deaths on subsequent hospitalization	2

Type of Organism	Number of Cases
Pneumococci	
Type I	1
V	1
XI	1
XIV	1
XIX	1
XIV and XV	1
VI and XXXIII	1
Unclassified	1
Streptococci	4
Not typed	8
Total	20 (2.73% of 731)

The symptoms of onset and the course of the pneumonia prior to institution of therapy in no way differed in this series from the usual picture. One noteworthy feature was the individuality of type I pneumococcus pneumonia. The patients with this type were more toxic; vomiting, abdominal pain, delirium and meningismus occurred more frequently. Empyema occurred eighteen times more often with this type than with all other forms of pneumonia. The mortality, however, was not greater than for the less severe forms.

Many patients were dehydrated and ketotic on admission. Approximately 60 per cent had acetone in the initial specimen of urine. Albuminuria occurred in 6 per cent and in 25 per cent of those with type I pneumonia. The majority of the patients had white blood cell counts above 10,000, but 26 per cent showed leukopenia. Twenty-one per cent had a level of hemoglobin below 60 per cent. The lowest hemoglobin readings were those for patients with non-pneumococcic pneumonia.

The most common complication encountered in the 731 cases of pneumonia was otitis media. This disease was considered a complication only when the drum was bulging and paracentesis yielded a purulent discharge. Catarrhal otitis media was not included among the complications. Suppurative otitis media occurred in 53 cases (7.4 per cent); the incidence was greatest in the younger age groups. Approximately 10 per cent of the children below 4 years, as compared with 3.5 per cent of those above 4 years, had this complication. Surgical intervention (other than paracentesis) was

TABLE 10.—*Mortality of Pneumonia in Children*

		Collected by Abt, 1926		Cook County Hospital, 1938		Cook County Hospital, 1939-1940	
Age, Years	Type of Pneumonia	Cases	Percentage of Deaths	Cases	Percentage of Deaths	Cases	Percentage of Deaths
1-2	Bronchial	50	49.0	96	14.0	142	6.3
	Lobar	77	15.6	32	0.0	66	6.0
		127	29.0	128	11.0	208	6.25
2-4	Bronchial	15	27.0	74	5.4	96	3.2
	Lobar	81	6.2	26	7.5	90	3.2
		96	19.4	100	6.0	186	0.0
Over 4	Bronchial	43	40.0	105	5.7	94	0.0
	Lobar	176	2.8	108	2.8	243	0.4
		219	10.0	213	4.2	337	0.3
Total		442	15.0	441	6.6	731	2.7

not required. The types of causal organisms are shown in table 6.

The second most frequent complication and the one of greatest severity was empyema. It occurred in 29 cases, or 4 per cent of all that were studied, and in 18 cases (62 per cent) of type I pneumococcus pneumonia. The types are shown in table 7. Bacteriologic examination of the empyema fluid offered an excellent opportunity for study of the accuracy of the typing from pharyngeal swabs. In 18 cases, the organism recovered from the empyema fluid corresponded to that previously recovered from the sputum. In 4 cases pneumococci (types III, V and IX and mixed types) had been reported in the specimen of sputum, but the pleural exudate in 2 contained streptococci and in 2 staphylococci. On the other hand, staphylococci were recovered from the throat in 1 and streptococci in 2 cases in which there later developed type I pneumococcus empyema. Pneumococci of types XIX and XXI, respectively, were found in the sputum in 2 cases of type I pneumococcus empyema, and pneumococci of type XIX were found in the sputum in 1 case of type V pneumococcus empyema. Using this small series as a test of the efficiency of sputum typing, in view of the fact that one third of the cases of pneumonia resulting in empyema were incorrectly diagnosed, one might conclude that sputum typing in our series was only 65 per cent accurate.

Among the 29 empyema patients 4 (14 per cent) died. One of these was a mongolian idiot whose blood culture showed pneumococci of type XIV. One had streptococcic sepsis secondary to mastoiditis, and another, with type V pneumococcus pneumonia, died on the day of admission. From the fourth child, a 2 year old infant with severe sepsis, a few cubic centimeters of pus was aspirated shortly before death; no bacteriologic report was received for this child. There seemed to be no benefit from chemotherapy after the empyema was established.

As has been previously stated, there was no attempt to alternate types of therapy in our series of cases. Sulfapyridine was used alone in 87 per cent and in conjunction with specific serum in 2.6 per cent; nonspecific therapy was used in 10.2 per cent. The average amount of sulfapyridine required to reduce the temperature to normal was 3.21 Gm. and the average total dose 6.17 Gm. The typical response, so well known now, was obtained in the majority of the cases. Of about 200 sulfapyridine-treated patients whose febrile response was analyzed, 34 per cent reached and maintained a normal temperature within twelve hours after the initiation of treatment, 66 per cent within twenty-four hours and 95 per cent within forty-eight hours (table 8).

The mild unfavorable reactions reported by other authors were encountered in our series. In 17 per cent of cases vomiting was of sufficient severity to be recorded on the nursing chart. It in no way interfered with the efficacy of the treatment, however, and was more annoying than it was serious. Hematuria due to irritation by acetylsulfapyridine crystals was recorded in 3.6 per cent of the cases. The urine cleared when the drug was discontinued. Acute cerebral manifestations were seen in approximately 2 per cent; these varied from coma to confusion and to delirium. In a few cases rash due to the drug was seen, and in 1 case hemolytic anemia occurred. No death could be attributed to the chemotherapy.

Twenty of the 731 children died, with a resulting mortality of 2.73 per cent. Nine died within the first twenty-four hours after admission. Two children were discharged from the hospital apparently well but returned a few weeks later; 1 died from multiple cerebral thromboses, and the other had a thrombosis of the inferior vena cava. The 9 children who died within the first twenty-four hours in most instances had terminal pneumonia on admission and died before any therapy could be instituted. The remaining 9 (1.33 per cent) died during treatment. All but 1 of the children who died were under 4 years of age; 12 were between 1 and 2, 5 were 3 and 1 was 5. Eight had lobar pneumonia and 10 bronchopneumonia, and 2 had a chronic interstitial type of pneumonia. The pathologic diagnosis was established by autopsy on 12. The types of organisms in the fatal cases are shown in table 9. Three of the deaths were of mentally defective children. It is interesting to note that only 1 death of a child with proved type I pneumococcus pneumonia occurred.

The 2.73 per cent mortality rate for the 731 cases presented was compared with statistics of previous years. In table 10 the mortality rates of a collected series cited by Abt in 1926 are compared with that for the Cook County Hospital in 1938 prior to specific therapy. In 1926, before the free use of fluids and blood transfusions, Abt showed that the mortality of children over 1 year of age for all types of pneumonia was 15 per cent and for lobar pneumonia 7 per cent. After the advent of better general measures in the care of patients with pneumonia, in 1938, the mortality in the same age group was 6.6 per cent for all pneumonias and 3 per cent for lobar pneumonias.

SUMMARY

1. Of 731 cases of pneumonia in children aged 1 to 13 years, pneumococci were demonstrated in 78 per cent.

2. Pneumococci of types I, VI, XIV and XIX were the ones most frequently found.

3. Administration of sulfapyridine was the sole therapeutic measure in 87.1 per cent of the cases; serum and sulfapyridine were used in 2.6 per cent, and nonspecific therapy was employed in 10.2 per cent.

4. Otitis media occurred in 7.4 per cent of the cases. It occurred most commonly in younger children and in association with type XIV pneumococcus infections.

5. Empyema occurred in 4 per cent of the cases. Type I pneumococci were recovered from the pleural exudate in 62 per cent.

6. The mortality rate was 2.73 per cent. When 2 children who died on readmission and 9 who died within the first twenty-four hours were excluded, the mortality rate was 1.33 per cent.

7. Type I infections presented the most severe symptoms and were most commonly complicated by empyema, but they had no higher a fatality rate than infections of other types.

8. Complications of treatment with sulfapyridine were encountered but were mild and did not interfere with the efficacy of the treatment.

TREATMENT OF THE MENOPAUSE

EVALUATION OF ESTROGEN IMPLANTATION

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During the past few years, the endocrine treatment of the menopause syndrome has become established on a firm, rational basis. This has been made possible by studies of numerous investigators clarifying the hormonal mechanism responsible for the menopausal symptoms and by the researches of the sterol chemists which made available highly potent preparations of ovarian hormones. The traditional concept of the menopause as an aberration of somatic function, predominantly psychogenic in origin and requiring only sedation and psychotherapy, has given way to the realization that the menopausal symptoms are primarily a manifestation of a hormone deficiency caused by a waning or cessation of ovarian activity and that rational therapy should consist of supplying the patient with the hormone she lacks. The therapeutic results obtained with estrogens in the menopause constitute one of the most gratifying and dramatic achievements of modern medicine. However, by virtue of the fact that administering estrogens is substitution therapy, the problem does not end with

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relief of the symptoms, since almost invariably discontinuation of the estrogens results in a recurrence of the symptoms. One must, therefore, make provision for adequate maintenance therapy if the patient is to be kept symptom free. The necessity for prolonged treatment focused attention on the problem of determining the most efficient method of administering estrogens.

There is considerable evidence which appears to indicate that the high dosage of estrogens required to relieve menopausal symptoms is, in great part, attributable to the rapid absorption and excretion of the hormone. To achieve a satisfactory therapeutic effect in a patient with an advanced degree of estrogen deficiency, it is necessary to administer injections of a solution of the hormone in oil, at frequent intervals, for periods of several weeks. Aside from the inconvenience caused the patient by the necessity for frequent injections, there is the additional factor of expense which places this form of therapy beyond the means of many patients. In the interests of economy and the patient's comfort, it would obviously be highly advantageous if one could administer the hormone in a form which would provide her, at a single administration, with a supply adequate for her needs for several months.

To this end we have been experimenting for five years with a variety of methods of administering estrogens. In 1938 we began a series of studies with the subcutaneous implantation of loose crystals of estradiol and obtained encouraging results.[1] Since then we have performed implantations in a total of 180 cases with either loose crystals or compressed pellets of various synthetic estrogens, androgens and combinations of the two. We present here the results of our experience with this method of estrogen administration.

LITERATURE

Deanesley and Parkes[2] in 1937 were the first to report the implantation method of administering sterol sex hormones in animals. In the following year, Bishop[3] reported the implantation of a 14 mg. compressed pellet of theelin in a 20 year old surgical castrate and noted that the "hot flush frequency" curve began to descend in about one week and that, at the end of four weeks, the flushes began to increase again. Shortly thereafter, we[1] reported complete relief of menopausal symptoms, for as long as ninety-eight days, in a series of 10 cases in which implantations were made with loose crystals of α-estradiol. In subsequent reports, prolonged therapeutic effects following implantation with compressed pellets (46 cases), as well as loose crystals (55 cases), were described.[4] It was also shown that "by means of the implantation of crystals of α-estradiol and α-estradiol benzoate, it is possible to achieve a strikingly more prolonged inhibition of the hypophysis in postmenopause and ovariectomized women than can be obtained by injection of comparable amounts of estrogenic compounds in solution in oil."[5] At the Scientific Exhibit of the American Medical Association, held in New York in June 1940, our group presented the results of estrogen implantation in a series of 126 cases. At that time, good therapeutic effects were noted, in some cases for as long as twelve months. In the same year, Bennett, Biskind and Mark[6] reported a series of 21 cases in which multiple (3 to 10) pellets of estrone were implanted. Eighteen patients were relatively free of symptoms for periods of from two to fourteen weeks following a single implantation with from 3 to 10 pellets weighing 5 to 6 mg. each.

PROCEDURE

In order to appraise the therapeutic value of estrogen implantation accurately, we formulated a series of questions designed to cover the phases of the problem which are of clinical interest. These are:

1. Is implantation more efficient than other methods of estrogen administration?
2. What is the most effective estrogenic compound?
3. What is the most effective method of implantation (compressed pellets or loose crystals)?
4. What is the optimal dose?
5. Are there any undesirable clinical side effects?
6. What is the effect of prolonged estrogenic stimulation on (*a*) the genital tract, (*b*) the breasts and (*c*) the tissues in contact with the implanted hormone?

The following studies, designed to supply answers to these questions, were undertaken:

1. *Clinical Evaluation of Efficiency.*—The duration of symptomatic relief resulting from estrogen implantation was compared with the results of administration, to a control group, of similar amounts of estrogens of the same chemical constitution, in solution in oil.

2. *Objective Criteria of Efficiency.*—Because of the protean character of symptoms of the menopause and the individual variations in subjective evaluation of symptoms, we felt that, in addition to a clinical appraisal, it was imperative that some objective criteria of estrogen activity be used to estimate the efficiency of the estrogen implantation.

The criteria employed were: (*a*) the duration of estrogenic effects on the endometrium and vaginal mucosa (as revealed by endometrial and vaginal biopsies and vaginal smears); (*b*) the duration of pituitary inhibition (as determined by excretion of the gonadotropic hormone).

3. With these criteria, the efficiency of α-estradiol, α-estradiol benzoate, α-estradiol dipropionate, and estrogens in oil were compared.

4. Employing the same standards, we conducted a comparative study of the merits of implanting the estrogens in the form of loose crystals and compressed pellets.

5. The rate of absorption of the hormone was determined by excision of the pellets at varying intervals after implantation.

6. Histologic (biopsy) studies of the endometrium and vaginal mucosa were performed and the tissues surrounding the implanted hormone were excised, at varying intervals after the implantation, to determine whether any abnormal proliferation had been induced.

7. The breasts were examined periodically for evidence of abnormal stimulation and neoplasms.

MATERIALS AND METHODS[7]

Our studies have been conducted on a series of 180 patients varying in age from 35 to 70 years, comprising instances of natural menopause and surgical and roentgen castration. The estrogens employed were α-estradiol, α-estradiol benzoate and α-estradiol dipropionate in the form of loose crystals and of compressed pellets.

Morphologic Studies.—Vaginal smears and biopsies were performed before implantation in every case; in cases of spontaneous and of roentgen menopause, preliminary endometrial biopsies were also taken. The vaginal smears were prepared by the aqueous fuchsin

1. Salmon, U. J.; Walter, R. I., and Geist, S. H.: Science **90:** 162, 1939.
2. Deanesley, R., and Parkes, A. S.: Proc. Roy. Soc., London, sB. **124:** 279, 1937.
3. Bishop, P. M. F.: Brit. M. J. **1:** 939, 1938.
4. Salmon, Geist and Walter.[6] Geist, Walter and Salmon.[13] Walter, Geist and Salmon.[13]
5. Salmon, U. J.; Geist, S. H., and Walter, R. I.: Proc. Soc. Exper. Biol. & Med. **43:** 424, 1940.
6. Bennett, H. G., Jr.; Biskind, Gerson, and Mark, Jerome: Am. J. Obst. & Gynec. **39:** 504, 1940.
7. Technic of implantation: Pellets were implanted, subcutaneously, through a trochar; crystals, through a small incision in the skin of the thigh. For details of technic, the reader is referred to previous publications. Salmon, Walter and Geist.[1] Geist, Walter and Salmon.[13]

method.[8] Vaginal biopsies were taken from the lateral wall of the upper two thirds of the vagina; endometrial specimens were obtained with the suction curet and stained with hematoxylin and eosin.

Vaginal smears were taken two or three times a week during the first two weeks after implantation; thereafter at intervals of one to two weeks. Vaginal biopsies, in the majority, were taken at intervals of two to eight weeks; material for endometrial biopsies were not taken uniformly from all patients. In a few selected cooperative patients suction curettages were performed at two week intervals; in others, at four to eight week intervals. One patient had a series of twelve biopsies taken during a period of seven months.

Gonadotropic Hormone Studies.—Urinary gonadotropic hormone extracts were prepared by a modification of the acetone precipitation method.[9] In 37 cases, assays were performed on twenty-four and forty-eight hour specimens for from six to nine consecutive days preceding the implantation; after the implantation, in 25 cases, gonadotropic assays were done at intervals of from seven to fourteen days; in 12 of the 37 cases, assays were performed continuously on forty-eight hour urine specimens for periods varying from thirty to two hundred and seven days after the implantation.

TABLE 1.—*Therapeutic Results of Estrogen Implantation in One Hundred and Twenty-Six Cases*

Percentage of Cases Unimproved	Percentage* of Cases Symptom Free for							
	1 Mo.	2 Mos.	3 Mos.	4 Mos.	5 Mos.	6 Mos.	9 Mos.	12 Mos.
5.5	94.5	94.5	87	82	71	63	37	33

* The percentage figures beyond four months were calculated on the basis of the number of patients observed for the specified length of time.

CLINICAL RESULTS

In table 1 are shown the clinical results observed in 126 patients following various types of estrogen implantation. It will be noted that 5.5 per cent of the patients were given no relief by the implantation; that 94.5 per cent were symptom free two months after the implantation, that at the end of four months 82 per cent, at the end of six months 63 per cent, and at the end of twelve months 33 per cent were still symptom free. The patients in the latter group are still being observed; some are still symptom free at the end of two years.

In table 2, the clinical results obtained with three chemically different estrogens, administered in the form of implants of crystals, pellets and injections of estrogens in oil, are shown.

Estradiol Crystals.—The total number of patients implanted with estradiol crystals was 42. These included 19 in natural menopause, 5 roentgen castrates and 18 surgical castrates. The dosage was varied from 5 to 50.6 mg.

Seventeen patients were implanted with doses varying from 5 to 10 mg. The duration of symptomatic relief varied from two to upward of twenty-four months. All the patients in this group were symptom free for a minimum of two months. At the end of twelve months, 40 per cent were still symptom free.

Twenty-three patients were implanted with doses varying from 20 to 30 mg. The duration of symptomatic relief varied from a minimum of five months to upward of twenty-four months. At the end of nine months, 44 per cent and, at the end of twelve months, 33.3 per cent of the patients were still symptom free. Two patients (not included in the table) who were implanted with 50 and 50.6 mg. of α-estradiol, respectively, were free of symptoms at the end of six and a half and seven months.

Estradiol Pellets.—In this group, 27 patients (17 in natural menopause, 4 roentgen castrates and 6 surgical castrates) were implanted with pellets varying in weight from 15 to 30 mg. Three patients experienced no relief. In the remaining 24, duration of relief varied from two to upward of twenty months. At the end of three months 85 per cent, at the end of six months 46 per cent and at the end of twelve months 25 per cent were still symptom free.

Estradiol Benzoate Crystals.—Nineteen patients (10 in natural menopause and 9 surgical castrates) were implanted with estradiol benzoate crystals in doses varying from 18 to 36.6 mg. One patient was not relieved. Of the remaining 18, the duration of relief varied from three to twelve months. All 18 patients were symptom free at the end of three months. At the end of six months 37 per cent and at the end of twelve months 7 per cent were still symptom free.

Estradiol Benzoate Pellets.—Twenty-two patients (9 in natural menopause, 4 roentgen castrates and 9 surgical castrates) were implanted with pellets of estradiol benzoate, varying in weight from 25 to 50 mg. Three patients experienced no relief. The duration of relief reported by the remaining 19 patients varied from two to seventeen months. At the end of three months 64 per cent, at the end of six months 50 per cent and at the end of twelve months 24 per cent were still symptom free.

Estradiol Dipropionate Crystals.—Twelve patients (5 in natural menopause, 3 roentgen castrates and 4 surgical castrates) were implanted with estradiol dipropionate crystals in doses varying from 18 to 25 mg. The duration of relief of symptoms varied from two to thirteen months. At the end of three months 75 per cent, at the end of six months 33 per cent and at the end of twelve months 17 per cent were still symptom free.

Estradiol Dipropionate Pellets.—Four patients were implanted with estradiol dipropionate pellets varying in weight from 24 to 31 mg. This group has been followed for only three months. All have remained symptom free during this period of observation.

INCIDENCE OF UTERINE BLEEDING

Estradiol Crystals.—No bleeding occurred in the patients implanted with the small doses of 5 to 10 mg. of estradiol crystals. Of the 23 patients in this series, 11 had had hysterectomies. Of the remaining 12 patients, 7 had one to five episodes of uterine bleeding. Bleeding occurred from one to five months after the implantation and varied from a moderate flow, lasting several days, to several weeks.

Estradiol Pellets.—Bleeding occurred in only 3 of the 21 patients with uteri in this group. The amount and duration of the bleeding was much less than in the group implanted with estradiol and estradiol benzoate crystals.

8. Salmon, U. J., and Frank, R. T.: Proc. Soc. Exper. Biol. & Med. **33**: 612, 1936. Geist, S. H., and Salmon, U. J.: Am. J. Obst. & Gynec. **38**: 392, 1939.

9. Modification of the Acetone Precipitation Method, to be published. Walter, Geist and Salmon.[14]

Estradiol Benzoate Crystals.—Bleeding occurred in 7 out of 10 patients. In this group the bleeding was comparable in amount and duration to the bleeding in the estradiol crystal group.

Estradiol Benzoate Pellets.—No bleeding occurred in this group.

Estradiol Dipropionate Crystals.—Four of the 8 patients in this group, with uteri, had bleeding episodes which were comparable in amount and duration with the estradiol crystal (20 to 30 mg.) group.

Estradiol Dipropionate Pellets.—One out of the 4 patients in this group had a moderate amount of uterine bleeding six weeks after the implantation.

EFFECT OF ESTROGEN IMPLANTATION ON THE ENDOMETRIUM

Pretreatment biopsies in all instances revealed various degrees of hypoplasia or atrophy. Postimplantation biopsies in the group implanted with crystals of estradiol or estradiol benzoate manifested proliferative changes within one week after implantation, and the endometrium progressed to a state of hyperplasia at the end of one month which persisted for approximately three and one-half months; moderate proliferation persisted for several months. In the majority of instances, the endometrium revealed regression to the preimplantation status at the end of approximately seven months.

In the group implanted with α-estradiol and α-estradiol benzoate pellets, the proliferative response in the endometrium was slower in development and less intense, hyperplasia being found in only 1 instance. Evidence of estrogenic stimulation in the form of moderate endometrial proliferation persisted for from four to six weeks, after which regressive changes were noted. The tempo of regression varied, the endometrium returning to the preimplanation status within from three to six months after the implantation.

EFFECT OF ESTROGEN IMPLANTATION ON VAGINAL MUCOSA

Pretreatment vaginal biopsies and smears revealed, in all instances, various degrees of estrogen deficiency. Estrogenic effects were noted within four days after all types of implantations. The vaginal mucosa of those implanted with α-estradiol and α-estradiol benzoate crystals, however, revealed estrogenic effects somewhat earlier and of more intense degree than the group implanted with pellets of comparable weight and similar chemical constitution.

The high level of full estrogenic stimulation, as indicated by proliferative changes in the mucosa, was maintained, in the group implanted with crystals, for periods varying from three to four months. After four months, the vaginal mucosa began to show regressive changes. Although the tempo of this retrograde process varied, in the majority the vaginal mucosa returned to the preimplantation state at approximately six to seven months after the implantation.

In the majority of the pellet group, the high level of full estrogenic stimulation was maintained for a shorter period, some patients showing complete regression at the end of three months. It is worthy of note that in a number of this group pellets weighing as much as 48 mg. were found encapsulated in the subcutaneous tissue at the time the vaginal mucosa revealed evidence of severe estrogen deficiency.[10]

GONADOTROPIC HORMONE EXCRETION STUDIES

A property of estrogens which lends itself to objective evaluation is the capacity of the hormone to inhibit the hyperactive hypophysis in estrogen-deficient women. Using the duration of hypophysial inhibition as a measure of estrogen activity, we have attempted to compare the relative effectiveness of the various implanted estrogens. In previous communications we [11] have reported that by means of the implantation of crystals of α-estradiol and α-estradiol benzoate it is possible to achieve a prolonged inhibition of the hypophysis of postmenopausal and castrated women. Further studies have shown that implanted crystals are strikingly more effective than pellets (of the same weight and chemical constitution) in inhibiting the hypophysis. Neither α-estradiol nor α-estradiol benzoate pellets were able continuously to inhibit the excessive excretion of gonadotropic hormone for longer than eight days. In contrast to this, patients who had been implanted with estradiol or estradiol benzoate crystals showed continuous inhibition for periods varying from fifty-seven to two hundred and eleven days.

TABLE 2.—*Duration of Symptomatic Relief After Various Types of Estrogen Implantation and Intramuscular Administration of Estrogens in Oil*

Estrogen	Weight, Mg.	Number of Cases	Number of Cases Not Relieved	Percentage of Cases Symptom Free at End of							
				1 Mo.	2 Mos.	3 Mos.	4 Mos.	5 Mos.	6 Mos.	9 Mos.	12 Mos.
Estradiol crystals: Group A	5-10	17	0	100	100	70	70	56	56	53	40
Group B	20-30	23	0	100	100	100	100	100	80	58	50
Estradiol pellets	15-30	27	3	89	85	85	81	58	46	35	25
Estradiol benzoate crystals	18-30.6	19	1	95	95	95	82	56	37	15	7
Estradiol benzoate pellets	25-50	22	3	86	73	64	59	50	50	28	24
Estradiol dipropionate crystals	18-25	12	0	100	83	75	50	50	33	17	17
Estradiol dipropionate pellets	24-31	4	0	100	100	100	75				
Estradiol benzoate in oil	25	10	1	40	10	0					
Estradiol dipropionate in oil	25	8	1	25	0	0					

EFFECT OF ESTROGEN IMPLANTATION ON THE BREASTS

The majority of patients implanted with crystals noted a sensation of fulness of the breasts associated with swelling and tenderness of the nipples. Usually, this occurred at the end of the second or third week after the implantation. Examination of the breasts of all patients revealed a diffuse engorgement, as well as erection and redness of the nipples and areolas. The majority of the patients were of the opinion that the engorgement was similar, but rather more intense, than that which they had experienced preceding a menstruation period. These symptoms usually lasted for periods varying from two to four weeks. Breast engorgement occurred in relatively few of the patients

10. Geist, Walter and Salmon.[13] Walter, Geist and Salmon.[13]
11. Salmon, Geist and Walter.[5] Geist, Walter and Salmon.[12]

implanted with pellets, and in these the symptoms were much less severe and of shorter duration. To date, in none of the implanted patients has there been any palpable evidence of neoplastic changes in the breasts.

LOCAL TISSUE REACTION TO ESTROGEN IMPLANTATION

The implantation sites of 38 patients were excised at periods varying from five days to fourteen months after implantation.

Capsule Formation About Implanted Pellets.—Pellets excised two months or longer after the implantation were found to be enveloped by a thick, avascular, fibrous capsule. The connective tissue adjacent to the implanted substance revealed a typical foreign body reaction.[12]

It is highly significant that in a number of instances, in spite of the presence of pellets varying in weight from 10 to 48 mg., in the subcutaneous tissue at the time of excision, endometrial and vaginal biopsies revealed histologic evidence of estrogen deficiency. Apparently, the fibrous capsules prevented absorption of the hormone in effective amounts.[13]

Tissue Reaction to Implantation of Crystals.—In contrast to the tissue reaction about the pellets decribed, no capsule was found at the site of implantation of the loose crystals. Microscopic examination revealed numerous tiny nodules, consisting of small central clear spaces divided by a fine connective tissue lattice-work surrounded by a zone of leukocytes, lymphocytes and foreign body giant cells.

RATE OF ABSORPTION OF ESTROGEN FROM IMPLANTED PELLETS

Nineteen patients (10 implanted with α-estradiol and 9 with α-estradiol benzoate) had the pellets excised at periods of time varying from five to two hundred and forty-five days after the implantation. In the α-estradiol group, the average absorption per day was 0.038 mg.; in the α-estradiol benzoate series, 0.027 mg. A slow rate of absorption is a desirable property, but it ceases to be an advantage if the rate of absorption becomes so slow that the physiologic requirements of the body are not met. This happens with both α-estrodiol and α-estradiol benzoate pellets as a result of the formation of the fibrous capsule. The role of the capsule in retarding and finally preventing absorption of the hormone in effective amounts is stressed, since pellet implantation has been advocated in the treatment of the menopause.[6] Although, as shown by these and other studies, the initial therapeutic results obtained with pellets are satisfactory, it should be borne in mind that absorption of the hormone in effective amounts ceases when only a small fraction of the pellet has been absorbed, so that, after several months, the patient retains an encapsulated pellet without deriving any therapeutic benefit from it.

EVALUATION OF INJECTIONS OF ESTROGEN IN OIL

A control series of 10 patients was given a single injection of 25 mg. each of α-estradiol benzoate and 8, 25 mg. of estradiol dipropionate, in solution in sesame oil. The effectiveness was measured by duration of symptomatic relief, as well as by the period of estrogenic effects on the endometrium and vaginal mucosa, and by suppression of gonadotropic excretion. Two patients were only slightly relieved of their symptoms; the remaining 16 had symptomatic relief for periods varying from three to eight weeks. Estrogenic stimulation of the vaginal mucosa and endometrium varied from three to four weeks. Excretion of gonadotropic hormone was suppressed for periods varying from nine to eleven days. The brief duration of these estrogenic effects (both clinical and morphologic) stand in sharp contrast to the prolonged effects resulting from estrogen implantation.

PROPHYLACTIC IMPLANTATION OF ESTROGENS

Following the demonstration of the prolonged therapeutic effects of estrogen implantation, it seemed logical to use estrogen implantations prophylactically in women who were subjected to bilateral oophorectomy. During the course of a study of the psychic and somatic effects of ovariectomy, we found that not infrequently women have menopausal symptoms during the first postoperative week. That these symptoms are not psychogenic and actually constitute a somatic reaction to deprivation of estrogenic hormone is indicated by the fact that excessive excretion of gonadotropin (expressive of hyperactivity of the hypophysis) was found as early as three days after bilateral ovariectomy.[14]

A series of 36 patients was implanted with pellets and crystals of estradiol, estradiol benzoate and estradiol dipropionate, either at the time of oophorectomy or within a few days thereafter. The postimplantation period of observation in this series varied from three to twenty-four months. During the first three months after implantation in only 1 [15] of the thirty-six patients did symptoms develop. During the following nine months, 20 patients had very mild flushes. Only 6 of the 20 patients had symptoms that became severe enough to require additional estrogen therapy. Sixteen patients have continued to remain free of symptoms during the entire period of observation, which extended to twenty-four months.

Appraisal of the prophylactic value of implantation in these patients is made difficult by the fact that it is impossible to know in how many of these patients symptoms would have developed without estrogen therapy. However, it is significant that in a control series of 88 untreated patients, 26 per cent had symptoms at the end of the first postoperative week, the incidence mounting rapidly during the following six weeks, at which time 81 per cent had symptoms; at the end of sixteen weeks, 92 per cent had typical symptoms.

The convalescence of the implanted patients appeared to be smoother, the usual postoperative asthenia and depression being distinctly less in evidence.

EFFECT OF ESTROGEN IMPLANTATION ON DIABETES IN MENOPAUSAL WOMEN [16]

It has recently been reported that administration of estrogen improves the carbohydrate tolerance and decreases the insulin requirement of menopausal diabetic women.[17] In a series of 18 menopausal diabetic

12. Geist, S. H.; Walter, R. I., and Salmon, U. J.: Proc. Soc. Exper. Biol. & Med. **43:** 712, 1940.
13. Walter, R. I.; Geist, S. H., and Salmon, U. J.: Proc. Soc. Exper. Biol. & Med. **44:** 314, 1940.
14. Walter, R. I.; Geist, S. H., and Salmon, U. J.: Endocrinology **27:** 154, 1940.
15. Proper evaluation of the symptoms of this patient was made difficult by the fact that a myocardial infarction developed several days after operation. The flushes subsided when she recovered from the cardiac complication.
16. These studies have been performed in collaboration with Drs. Herbert Pollack, Seymour Goldgraben, L. Eisenstein and Charles Poole of the Department of Metabolism of the Mount Sinai Hospital.
17. Spiegelman, A. R.: Am. J. M. Sc. **200:** 228, 1940. Mazer, Charles; Meranze, D. R., and Israel, S. L.: Evaluation of Constitutional Effects of Large Doses of Estrogenic Substances, J. A. M. A. **105:** 257 (July 27) 1935. Patton, P. B.: Weekly Roster & M. Digest **31:** 1201, 1936.

women whom we implanted with estrogens, only 1 showed any improvement in the carbohydrate tolerance and insulin requirement. The results of this study are being reported elsewhere in detail.

COMMENT

Clinical Evaluation of Effectiveness of Estrogen Implantation.—Before implantation, all the patients in the series had complained of the usual menopausal symptoms, the most prominent and constant of which were flushes. Other symptoms, such as vertigo, weakness, headaches, palpitation, nervousness, insomnia, pruritus vulvae, arthralgias and arthritis, were present in various combinations in different patients. Because of variations in the incidence and intensity of these symptoms and their variable response to therapy, it was found impossible to compare the therapeutic effectiveness of the administered estrogens with regard to amelioration of these symptoms. Therefore, because of the occurrence of flushes in all the patients and the ability of patients to keep an account of their frequency, the amelioration of this symptom was selected as an index of therapeutic effectiveness.

In many instances, relief of flushes occurred as early as twenty-four hours after the implantation. With the few exceptions who were not relieved at all, the majority were almost completely relieved of flushes at the end of one week. Many of the associated menopausal symptoms, namely headaches, dizziness and weakness, were relieved at the same time as the flushes. The symptoms most resistant to treatment were the arthralgias. In only a relatively small number of cases were these relieved. The most rapid therapeutic effects were noted in patients implanted with crystals.

It is interesting to note that the 7 patients who experienced no relief of symptoms after implantation all showed morphologic evidence of estrogenic stimulation. The therapeutic failure of the implantation in these cases draws attention to two important aspects of menopause therapy: first, that estrogens alone are, in some patients, therapeutically ineffective and that such patients frequently respond to androgens;[18] second, that in a number of patients the persistence of symptoms can be traced to psychogenic factors. The incidence of initial failures encountered with the various types of implantations should not, therefore, be construed as a gage of their relative therapeutic merits, since the role played by psychogenic factors was not evaluated in these patients before the implantation.

A number of these refractory cases were subsequently investigated and found to present neuropsychiatric disorders which, in the opinion of the psychiatrists, may account for persistence of symptoms. Realizing the importance of evaluating the degree to which collateral psychosomatic phenomena may color the symptomatology before and after treatment, we have undertaken a series of psychiatric studies of this aspect of the menopause problem.[19] The results of this investigation are to be reported in the near future.

At the beginning of this study, a number of questions were formulated which were designed to determine the practical value of estrogen implantation as a therapeutic measure. The results of these studies supply the answers to these questions.

1. *Is the implantation method more efficient than other methods of estrogen administration?* A survey of the therapeutic results two months after implantation reveals that all forms of estrogen implantation are indisputably superior to the intramuscular injection of comparable amounts of the hormone in oil. Thus, only 1 of the 18 patients treated with estrogens in oil was symptom free at the end of two months, whereas the percentage of symptom free patients in the implanted series at the end of two months varied from 100 (estradiol crystals) to 73 (estradiol benzoate pellets).

2. *What is the most effective estrogenic compound?* Inventory of the therapeutic results at the end of five months reveals that the α-estradiol crystals were the most effective of the three estrogenic substances employed. All the patients in this group were symptom free for five months, whereas in the others the percentage of symptom free patients at the end of five months varied from 50 to 56.

3. *What is the most effective method of implantation (crystals or pellets)?* Judged by (*a*) the degree and intensity of symptomatic relief, (*b*) the intensity and duration of estrogenic activity (as indicated by proliferative changes in the endometrium and vaginal mucosa) and (*c*) the duration of hypophysial inhibition, estrogens in the form of loose crystals are more efficient than compressed pellets of the same chemical constitution and comparable weight.

4. *Are there any undesirable clinical side effects?* Effect on Breasts: Tenderness and pain in the breast and uterine bleeding were the only undesirable clinical effects noted. Both of these phenomena also occur, not infrequently, following other methods of estrogen administration. Furthermore, the breast reactions in the implanted patients were of short duration (approximately two to six weeks) and caused only mild discomfort.

Uterine Bleeding: The uterine bleeding, however, is a collateral effect which may be annoying to both the patient and the physician. In older women it may arouse fears of a uterine malignant growth. Furthermore, the possibility of a uterine malignant growth occurring coincidentally must be considered and excluded in each instance by thorough curettage. It is worthy of note that the highest incidence of bleeding (approximately 65 per cent) occurred in the patients implanted with the larger doses of estrogen crystals (25 to 30 mg.), whereas no bleeding occurred in the group of patients implanted with small doses of estrogen crystals (5 to 10 mg.). Apparently the incidence of bleeding mounts with an increase in the amount of hormone implanted and is evidently a function of the degree of estrogenic stimulation of the endometrium. The optimal dose obviously would be an amount which would give a maximal therapeutic effect with a minimal incidence of uterine bleeding.

5. *What is the optimal dose?* The results of these studies indicate that the optimal dosage lies between 10 and 25 mg. of α-estradiol crystals. Further studies are being conducted to define this dosage more accurately.

6. *What is the effect of prolonged estrogenic stimulation on* (a) *the genital tract,* (b) *the breasts and* (c) *the tissues in contact with the implanted hormone?* As indicated by the endometrial and vaginal biopsy studies, the implanted estrogens produce a prolonged and intense poliferative reaction in these tissues. It

18. Salmon, U. J.: J. Clin. Endocrinol. **1**: 162, 1941. Geist, S. H., and Salmon, U. J.: New York State J. Med., to be published.

19. This study is being conducted in collaboration with Drs. Lawrence Kubie, Samuel Atkin and Isidore Silbermann.

should be borne in mind that these proliferative effects were limited in duration and that the endometrium and vaginal mucosa spontaneously regressed in all cases to the preimplantation state of quiescence within six to seven months.

The question naturally arises as to whether the intense estrogenic stimulation may not possibly have a carcinogenic effect on the genital tract and breasts. For obvious reasons this question cannot, at this time, be answered categorically. If a neoplastic type of proliferation were induced as a result of the estrogen implantation, it is logical to expect that abnormal changes would occur during the period of maximal or, at any rate, active estrogenic stimulation. It is worthy of note, therefore, that during the course of this study, which covers a period of more than two years and which exceeds the period of active estrogenic stimulation by many months, evidence of neoplasia was not found either in the vaginal mucosa or in the endometrium.[20] Furthermore, no evidence of neoplastic proliferation was found in the tissue contiguous with or adjacent to the implanted estrogens, and in no instance was there any clinical evidence of neoplastic changes in the breasts.

On the basis of the results of this study, it would appear that implantation is a practical, efficient and safe method of administering estrogens and that the implantation of estrogens, at the time of bilateral oophorectomy, is a prophylactic measure of great value because of its somatic as well as its psychotherapeutic effects.

SUMMARY AND CONCLUSIONS

1. Implantation with loose crystals and compressed pellets of α-estradiol, α-estradiol benzoate and α-estradiol dipropionate was carried out on a series of 180 patients.

2. A control series of 18 menopausal patients was given a single injection of comparable amounts of estrogen in solution in oil.

3. The efficiency of the implantation was evaluated on the basis of (*a*) degree and duration of symptomatic relief; (*b*) intensity and duration of estrogenic activity, as indicated by proliferative changes in the endometrium and vaginal mucosa, and (*c*) duration of hypophysial inhibition, as indicated by suppression of gonadotropic hormone excretion.

4. Judged by the foregoing criteria, the implantation of estrogens in the form of loose crystals or compressed pellets is more efficient than the injection of comparable amounts of hormone in oil.

5. Loose crystals of α-estradiol and α-estradiol benzoate are more effective than the compressed pellets of the same chemical constitution. The longest period of symptomatic relief was obtained by the implantation of α-estradiol crystals.

6. Subcutaneous implantation of estrogens in the form of loose crystals of α-estradiol, in amounts varying from 10 to 25 mg., is a simple, safe and efficient method of administering estrogens in the treatment of symptoms attributable to estrogen deficiency resulting from surgical or roentgen castration or the natural menopause. It is also recommended as a prophylactic procedure at the time of bilateral ovariectomy because of its beneficial somatic and psychotherapeutic effects.

875 Fifth Avenue—100 East 74th Street—1070 Park Avenue.

20. Geist, S. H., and Salmon, U. J.: Am. J. Obst. & Gynec. **41**: 29, 1941.

BENIGN AND MALIGNANT GIANT-CELL TUMORS OF BONE

DIAGNOSIS AND RESULT OF TREATMENT

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All giant-cell tumors were considered at one time to be malignant lesions and were classified by the term "giant-cell sarcoma." As knowledge concerning their true nature increased, it became evident that some of them were benign lesions and curable by means of surgical removal. I believe that the term "giant-cell sarcoma," when used in reference to benign giant-cell tumor, has been partly responsible for the confusion that has existed in the classification and study of this particular group of bone lesions. In a previous publication I [1] suggested the use of the terms "benign giant-cell tumor" and "malignant giant-cell sarcoma" in an attempt to clarify the differentiation.

Although surgical treatment resulted in many cures of patients who had these tumors, I became wary in my prognosis for I found that occasionally there was recurrence of the lesion, and in some instances metastasis occurred. Some physicians concluded that meddlesome surgical intervention and irradiation were responsible for the transition of the benign group into the malignant group, whereas others believed that the malignant condition was present in the beginning but had not been recognized. In some cases in which the lesion has been long standing, a malignant change may occur and regions of typical benign giant cells, composing most of the tumor, may show smaller foci of malignant cells. The degree of malignancy in such instances apparently is of low grade and the prognosis correspondingly better than in such bone lesions as osteogenic sarcoma. The radiologists have discovered this type of tumor to be radiosensitive and have reported cures after irradiation. Pathologists have found similar microscopic tissue present in cases of osteitis fibrosa cystica, of giant-cell tumor and in the generalized skeletal disease found in hyperparathyroidism.

The physician in charge of the patient on whom a diagnosis of tumor of the giant-cell type has been made therefore must take into consideration several factors in differentiating the true nature of the lesion. Invariably the roentgenograms give him the greatest aid by demonstrating the size, rapidity of growth, location, osteoclastic character, penetration or invasion of soft tissue and the earliest evidence of pulmonary metastasis. Roentgenographic examination of the thorax to exclude possible pulmonary metastasis is our routine procedure. The chemist further assists him in determining the concentration of calcium in the serum when greater than 9 to 11 mg., of phosphorus when less than 3 mg., and of phosphatase when greater than 5 units per hundred cubic centimeters and presence of excessive calcium in the urine by the Sulkovitch test, thus differentiating the type of lesion found in hyperparathyroidism. Tumor of the parathyroid may be discovered on palpation or when an exploratory operation is performed on the parathyroid glands. In the work at the Mayo Clinic it has been our habit to

From the Section on Orthopedic Surgery, Mayo Clinic.
Read before the Section on Orthopedic Surgery at the Ninety-Second Annual Session of the American Medical Association, Cleveland, June 4, 1941.

1. Meyerding, H. W.: Treatment of Benign Giant-Cell Tumors, J. Bone & Joint Surg. **18**: 823-841 (Oct.) 1936.

cooperate closely with the roentgenologist, the pathologist, the chemist and the endocrinologist so that we may give our patient an accurate diagnosis, which is essential to the institution of the proper method of treatment and which offers him the best prognosis in this particular lesion.

TABLE 1.—*Benign and Malignant Giant-Cell Tumors, 1916-1940 Inclusive*

Age, Years	Sex		Total Patients		
	Male	Female	Number	Per Cent	
10-19	14	15	29	23.4	75.8
20-29	13	20	33	26.6	
30-39	12	20	32	25.8	
40-49	6	11	17	13.7	24.2
50-59	9	0	9	7.3	
60-69	2	1	3	2.4	
70-79	1	0	1	0.8	
Total	57	67	124	100	
Youngest, years	12	10	10		
Oldest, years	72	60	72		
Mean, years	33.6	29.9	31.6		

In large medical centers the study and analysis of the accumulated material permit the publication of much useful information concerning the diagnosis, treatment and prognosis, thus making it available to the general practitioner and surgeon. No one physician in private practice could expect to see, during a natural span of life, a sufficient number of patients who have rare bone lesions to permit him to obtain enough material on which to base conclusions. The generalized bone lesions of hyperparathyroidism, epulis of the jaw and osteitis fibrosa cystica, although all doubtless are allied closely to this lesion, are not included here as typical giant-cell tumors of benign or malignant nature, which are commonly located in the region of the epiphysis. The Bone Sarcoma Registry recognizes, in the recent classification, a malignant group and a benign epiphysial giant-cell tumor group.

Of the 124 patients with giant-cell tumor seen at the Mayo Clinic during the quarter of a century from

TABLE 2.—*Benign and Malignant Giant-Cell Tumors, 1916-1940 Inclusive*

Situation	Sex of Patients		Total Patients		
	Male	Female	Number	Per Cent	
Femur	19	23	42	33.9	58.1
Tibia	16	14	30	24.2	
Humerus	5	3	8	6.5	
Ilium	4	3	7	5.6	
Ulna	2	4	6	4.8	
Radius	2	4	6	4.8	
Fibula	3	2	5	4.0	
Lumbar region	2	3	5	4.0	
Sacrum	1	3	4	3.2	
Scapula	1	1	2	1.6	
Rib	0	2	2	1.6	
Pubis	0	2	2	1.6	
Cervical vertebra	1	0	1	0.8	
Thoracic vertebra	1	0	1	0.8	
Os calcis	0	1	1	0.8	
Cuboid	0	1	1	0.8	
Multiple	0	1	1	0.8	
Total	57	67	124	100	

1916 to 1940 inclusive, in 101 the lesions were benign and in 23, or 19 per cent, they were malignant. Simmons [2] in his study found that, in 8 per cent of the cases of giant-cell tumor, in which the treatment was conservative, metastasis subsequently developed. Coley [3] reported a series of 50 cases in which the diagnosis was benign giant-cell tumor and subsequently 10 patients, or 20 per cent, died of metastasis. The importance of a thorough and expert pathologic examination is therefore obvious, and it has been our practice to have these tumors examined by means of frozen section technic at the time of operation and rechecked in permanent sections later. By this means we have been able to differentiate the benign from the malignant lesion and thus govern the choice of treatment to be employed. It must be remembered that not all giant-cell tumors are suitable for surgical treatment and that in certain instances irradiation is the method of choice. I am convinced that the clinical diagnosis and roentgenologic diagnosis may not always be correct and that, although a high percentage may be correct when made by the expert, it is far better to have the corroboration of the pathologist's diagnosis.

BIOPSY

I further believe that the added advantage of a microscopic diagnosis far offsets any danger which may be ascribed to biopsy. In 4, or 3 per cent, of our cases

TABLE 3.—*Benign and Malignant Giant-Cell Tumors, 1916-1940 Inclusive*

Duration in Years	Patients			
	Number	Per Cent		
Less than 1	50	47.6	73.4	
1- 2	32	25.8		
2- 3	8	6.5	15.4	
3- 4	8	6.5		
4- 5	3	2.4		
5- 6	1	0.8	11.2	
6- 7	4	3.2		
7- 8	1	0.8		
8- 9	1	0.8		
9-10	1	0.8		
10 and more	5	4.0		
Not stated	1	0.8		
Total	124	100		

herein reported, biopsy alone was done and the patient returned home to carry out treatment there. Three lesions were benign and one was malignant. All patients in this group were living five or more years after biopsy.

Table 1 shows the distribution of patients by age and sex, table 2 the location of the tumor, table 3 the duration of symptoms and table 4 the previous treatment of the patients.

IRRADIATION

We do not practice the routine preoperative irradiation of all patients who have tumor of bone nor do we practice a period of watchful waiting, as during such time metastasis may occur and thus the opportunity of a cure may be lost. Rather it is our aim to establish a diagnosis, to determine the benignancy or malignancy of the tumor and to adopt the method of treatment which in our experience has proved most satisfactory. Therefore a detailed history and careful laboratory and roentgenologic studies permit a preliminary diagnosis, after which the patient is informed of our desire to verify our opinion by examining a section of tissue microscopically and consent is obtained to proceed with treatment that may be indicated. In those cases in which the lesion is inoperable, irradiation is carried out.

In our practice it is evident that irradiation has won a distinct place in the treatment of patients who have these tumors, since 23, or 19 per cent, of our series, were so treated, and it is gratifying indeed to see some of the excellent results that have occurred in appar-

2. Simmons, C. C.: Primary Malignant Bone Tumors: Differential Diagnosis—Its Importance in the Selection of Treatment, Am. J. Surg. **27**: 19-25 (Jan.) 1935.

3. Coley, W. B.: Prognosis and Treatment of Giant-Cell Sarcoma Based on a Further Study of End Results in Sixty-Nine Cases, Ann. Surg. **86**: 641-665 (Nov.) 1927.

ently rather hopeless cases. We have kept an open mind regarding the relative value of various methods of treatment. We believe that in the majority of instances surgical treatment offers by far the most rapid and certain cure. Occasionally soft and osseous tissues have been damaged by preliminary irradiation with resultant actinodermatitis and ulceration, which make surgical treatment difficult or inadvisable. Certainly irradiation of patients who have tumor of bone should be supervised by experts in roentgen therapy. I believe that irradiation used alone or in combination with surgical treatment will prove of increasing value in selected cases of benign giant-cell tumor and of malignant giant-cell sarcoma.

TABLE 4.—*Benign and Malignant Giant-Cell Tumors, 1916-1940 Inclusive*

Procedure Elsewhere	Patients	
	Number	Per Cent
Cast, traction or brace	13	22.4
Heat, manipulation or massage	8	13.8
Excision, curettage (bone graft, 1)	10	17.4
Excision, curettage and irradiation	9	15.5
Irradiation	9	15.5
Exploration	2	3.5
Tonsillectomy for arthritis	1	1.7
Bed for fracture	1	1.7
Aspiration	1	1.7
Section of eighth intercostal nerve for pain	1	1.7
Treatment for sarcoma	1	1.7
Treatment for syphilis	1	1.7
Serum	1	1.7
Total	58	100
Amputation advised elsewhere	5	

EXCISION BY CURETTAGE

Curettage of a giant-cell tumor should consist of complete excision, and in order to accomplish this it is necessary to have a dry field in which to work and a large enough opening so that the magnitude of the lesion may be determined and every particle of tumor tissue removed. After excision by curet, the wound should be wiped dry and washed thoroughly with physiologic solution of sodium chloride or mild antiseptic solution; the surgeon should bear in mind that the mechanical action of the fluid will wash out invisible particles. Phenol then is swabbed over the dry surface and followed by the use of sponges dampened with alcohol, which should aid in eliminating the danger of remaining tumor tissue. The tissues then are closed snugly layer by layer and pads and compression bandage applied. Ordinarily there will be little bleeding. The use of drains may lead to infection and a prolonged convalescence. Amputation has been found necessary in those cases in which the tumor was large with ulcerating dermatitis or in which infection had occurred. I have used packs in the cavity after removal of the large tumor, sutured the wound snugly and then removed the packs in a second operation, after which homogenous bone was inserted. A large cavity is never drained after excision. This method of excision alone has been used with 100 per cent good results; in 7 cases, in all of which the lesion was benign and in which the patient was traced five or more years, he had lived five or more years. This method is more obviously adapted to the smaller tumors in the benign group.

EXCISION AND IRRADIATION

Excision followed by irradiation has gained in popularity, and in our series it was employed in 23, or 19 per cent, of the cases of the entire group (table 5). Certainly the surgeon who has done his utmost in removing the tumor but is in doubt about the completeness of the excision is justified in employing postoperative irradiation that may insure a good result. This method, when used in cases in which there is a low degree of malignancy, should show improved prognoses. In the group in which the lesion was benign, 16 patients were operated on five years or more before this study was made, all of whom were traced and were living when the study was made, thus giving a five year survival rate of 100 per cent. In the group in which the lesion was malignant, there were 5 patients on whom this procedure was performed five years or more before the study was made. All of them were traced and 3, or 60 per cent, had lived five years or more.

TABLE 5.—*Benign and Malignant Giant-Cell Tumors 1916-1940 Inclusive*

Procedure	Patients	
	Number	Per Cent
Biopsy	4	3.2
Irradiation with or without biopsy	23	18.5
Excision alone	8	6.5
Excision and irradiation	23	18.5
Excision and bone graft	21	17.0
Excision, bone graft and irradiation	6	4.8
Resection	3	2.4
Amputation (primary, 20) (following excision, 5) (bone graft, 2)	27	21.8
No treatment—diagnosis only	9	7.3
Total	124	100

EXCISION AND BONE GRAFTING

An increasingly valuable method of treatment and one that requires especial technical knowledge is the complete excision of the tumor followed by immediate filling of the defect with bone grafts. This method assures more accurate diagnosis, since it permits microscopic diagnosis from frozen tissue. The tumor is removed entirely and the cavity filled with autogenous bone grafts, thus assuring the most rapid and accurate filling of the defect. Indeed the patient has a minimal loss of time and in most instances is assured an excellent functional result. During recent years excision with bone grafting has been my favorite method of treatment of patients who had giant-cell tumor of bone, and needless to say it has given the most gratifying results. The larger tumors, which have challenged the surgeon in the past, are now approached with greater confidence as he knows he will often save the limb and the patient will obtain a good result, which was not possible prior to insertion of grafts. When I wish to support a neighboring joint surface, as in the region of the knee, I employ thick sections of the tibia as struts, after which multiple shavings of bone are used to fill in the interspaces. Blood coagulates rapidly about such a mass of living bone and the most favorable conditions exist for the formation of new bone.

TABLE 6.—*Benign and Malignant Giant-Cell Tumors, 1916-1935 Inclusive*

Classification	Diagnoses, Patients *	Patients Traced	Lived Five Years or More	
			Patients	Per Cent of Traced Patients
Benign	69	63	61	96.8
Malignant	20	20	13	65.0
Total	89	83	74	89.2

* Inquiry as of 1941. The five year group comprises the patients whose diagnoses were made five years or more prior to the time of inquiry; that is, 1935 or earlier.

Indeed, in cases in which operation is performed properly the rapidity of the filling in of these defects has been astounding.

Although it is a technic employed more often in recent years, 21, or 17 per cent, of the patients in our series had excision and bone grafting. Of those who had benign lesions, 10 were operated on five or more years before this study was made; 9 of these were traced and 8, or 88.9 per cent, had lived five or more years. One of the 9 traced patients died of enteritis twenty-one months after operation. One patient that was not traced for as long as five years after operation was known to be well forty-two months after operation.

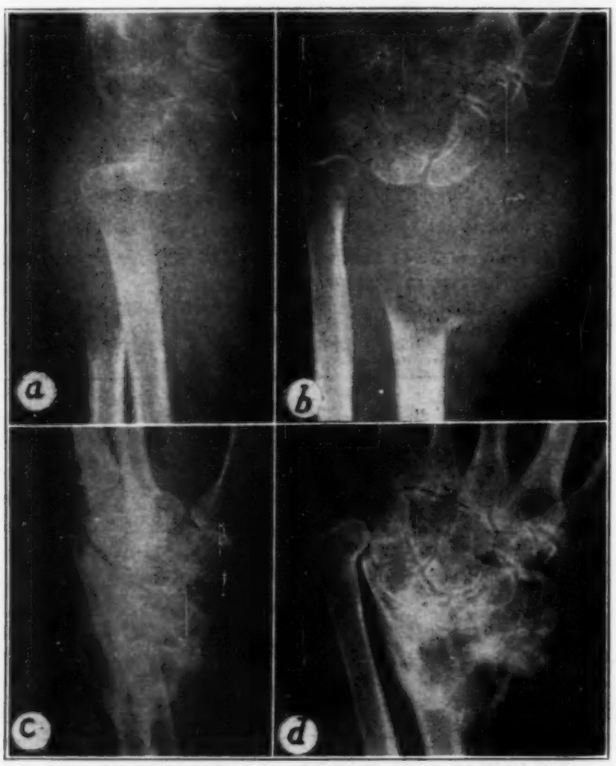

Fig. 1.—*a*, lateral view showing giant-cell tumor of distal end of left radius (one year's duration), which was taken on June 8, 1937, eight months after curettage elsewhere; *b*, anteroposterior view; *c*, twenty-six months after irradiation; *d*, anteroposterior view.

Fig. 2.—*a*, lateral view showing giant-cell tumor of lower end of the left tibia; *b*, anteroposterior view showing the tumor with involvement of the ankle joint.

EXCISION, BONE GRAFTING AND IRRADIATION

In a group of 6 cases, or 5 per cent, irradiation was given after excision and bone grafting. In 5 of these operation was performed more than five years before this study was made. Three patients were traced and all of them had lived five years. None of these had malignant lesions. Excision and bone grafting with or without irradiation result in the saving of extremities in cases which in former decades were considered hopeless, with amputation the only method of choice.

RESECTION

Resection of the entire portion of bone containing the tumor has a very limited field, but in certain cases in which there is involvement such as that found in the ribs, radius, ulna and fibula it is a method of choice. Certainly in those cases in which the tumor is located in the bone and the bone can be resected readily, such operation in the benign and low degree malignant type is ideal and should give the most satisfactory result. Simmons has reported good results in 100 per cent of his cases from the Registry of Bone Sarcoma. In our series 3 patients were operated on and traced and were living five years later (100 per cent).

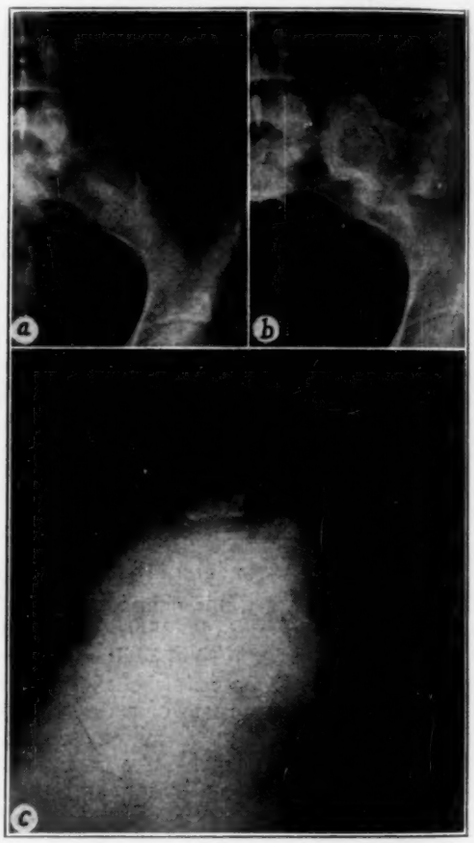

Fig. 3.—*a*, anteroposterior view showing giant-cell tumor of the left ileum; *b*, anteroposterior view three years after biopsy and irradiation, which shows calcification of the tumor; *c*, same as *b* (lateral view).

AMPUTATION

Amputation was performed in 27, or 21.8 per cent, of our cases. In 24 of these amputation had been performed five or more years before the date of this study. All 13 patients who had had amputation for benign giant-cell tumor were traced for five years after operation and were well; 11 patients who had had amputation for malignant giant-cell sarcoma were traced for five years after operation; 8 of these survived for five years. Of the entire group of 24 patients on whom amputation had been performed five or more years before the date of this study, 21, or 87.5 per cent, survived for five or more years. In 20 of the

total 27 cases the amputation was a primary procedure, in 5 it followed excision and in 2 it followed bone grafting. Some of the patients had had previous treatment and were operated on a number of years ago, and infection, actinodermatitis, ulceration, fracture or recurrence may have been a complicating factor with or without malignant lesions. Amputation at that time was deemed advisable. Irradiation was not used prior to 1920 in our series, and of the 32 patients seen in the ten year period from 1916 to 1925 inclusive only 3 received irradiation, while during that same time amputation was performed in 13 cases. During the next fifteen years, from 1926 to 1940 inclusive, of the 92 patients seen only 14 had amputation while 20 had irradiation. Among older patients who have extensive destruction of bone in the region of a weight bearing joint, amputation may be preferred, whereas among younger patients an operation and attempt to save the extremity would

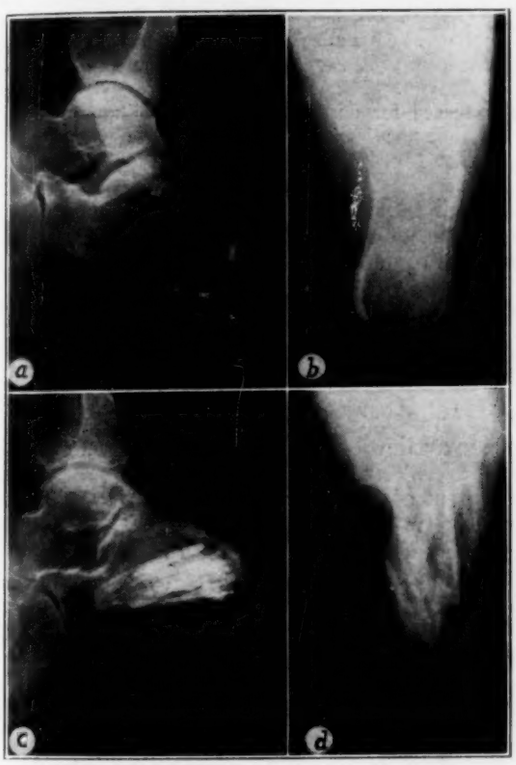

Fig. 4.—*a*, lateral view of the right foot showing giant-cell tumor with extensive involvement of the os calcis; *b*, posterior view of the os calcis; *c*, postoperative lateral view showing multiple bone grafts in position after excision of the tumor; *d*, posterior view of os calcis showing bone grafts in position.

be considered. In some instances in which we have amputated a painful and disabling extremity, the patient has been able to return to a gainful occupation with a complete change of his mental and physical condition.

Thirteen patients, or 65 per cent, of 20 patients who had malignant lesions, all of whom were operated on five or more years before the date of this study and traced, lived five years. Sixty-one, or 97 per cent, of 63 patients who had benign lesions and who were traced five or more years after treatment survived five or more years (table 6).

REPORT OF CASES

CASE 1.—A married woman aged 22, admitted to the clinic on May 10, 1937, complained of pain, local heat and swelling of the left wrist. She gave a history of having had a curettage of a tumor of the lower end of the left radius followed by eight roentgen treatments about nine months prior to her admission. She denied trauma and stated that her symptoms had begun about one year previously.

A diagnosis of benign giant-cell tumor of the left radius was made, and after five courses of low voltage roentgen treatment the tumor was destroyed. In May 1941 the patient reported that, although some deformity was present, she had

Fig. 5.—*a*, lateral view showing malignant giant-cell sarcoma of lower end of right femur; *b*, anteroposterior view showing destruction of lateral condyle of right femur.

had no recurrence of the tumor and had had no further treatment. Roentgenograms now showed that the tumor was completely calcified (fig. 1).

CASE 2.—A man aged 37, admitted to the clinic on June 26, 1939, stated that he had received an injury to the left ankle three and a half months prior to his admission, and two weeks

Fig. 6.—*a*, lateral view showing giant-cell tumor of the upper end of right tibia; *b*, anteroposterior view; *c*, postoperative lateral view after excision of tumor and insertion of multiple bone chips; *d*, postoperative anteroposterior view.

subsequently pain and swelling had developed which had persisted. Furthermore he stated that he had consulted physicians, who had advised him to have his leg amputated for a malignant lesion.

At the time of our examination there was pain and swelling of the left ankle and we suspected a malignant lesion but

advised operation under tourniquet and microscopic diagnosis. On June 27, 1939 the tumor was excised and bone grafts were inserted to fill in the defect. The pathologist reported a benign foreign body giant-cell tumor. Two low voltage roentgen treatments were given. Two years later, at the time of writing of this paper, the patient reported that he was well and had had no signs of recurrence of the tumor (fig. 2).

CASE 3.—A married woman aged 26, admitted to the clinic on June 8, 1937, complained of pain and swelling in the left buttock of four months' duration.

We suspected a malignant lesion of the left ilium, and an exploratory operation was advised. On June 16, 1937 the tumor was explored and on examination of the tissue the pathologist found that it was a benign foreign body giant-cell tumor. The patient was given nine low voltage roentgen treatments postoperatively and the tumor calcified.

In January 1941 the patient was delivered of a normal baby. At the time of writing of this paper, four years after institution of treatment, the tumor was completely calcified and the patient was in good health (fig. 3).

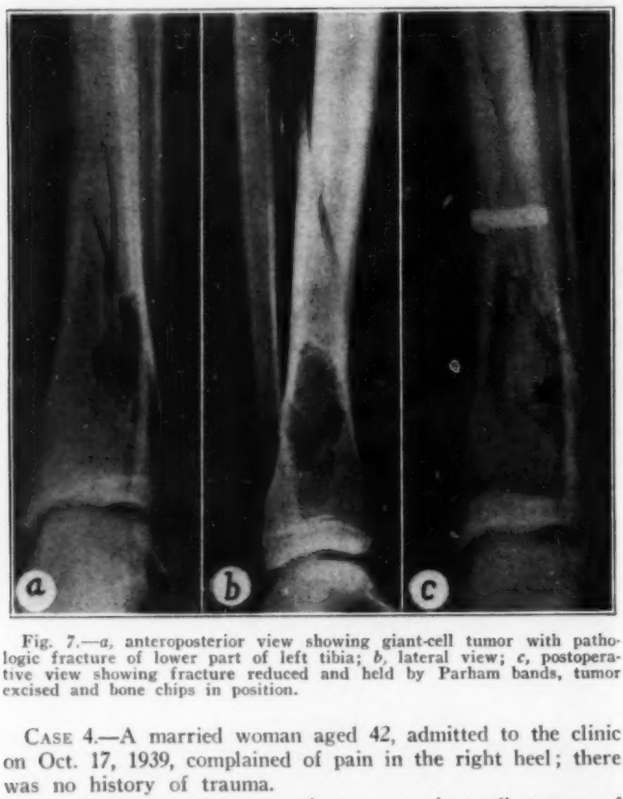

Fig. 7.—*a*, anteroposterior view showing giant-cell tumor with pathologic fracture of lower part of left tibia; *b*, lateral view; *c*, postoperative view showing fracture reduced and held by Parham bands, tumor excised and bone chips in position.

CASE 4.—A married woman aged 42, admitted to the clinic on Oct. 17, 1939, complained of pain in the right heel; there was no history of trauma.

A preoperative diagnosis of cyst or giant-cell tumor of the right os calcis was made. Operation was carried out on Nov. 1, 1939. A cystic cavity containing fluid and granulation-like tissue was removed; the pathologist reported a benign foreign body giant-cell tumor. The wound was swabbed with iodine, and multiple bone chips from the right tibia were inserted. The convalescence was uneventful and the patient reported seventeen months later that she was well and working and had had no further symptoms (fig. 4).

CASE 5.—A nun aged 40 years reported at the clinic for examination on Dec. 17, 1937, at which time she complained of pain and swelling in the lower part of the right femur of three months' duration.

A preoperative diagnosis of sarcoma of the right femur was made. Operation was performed on Dec. 20, 1937 under tourniquet, and an immediate microscopic diagnosis of malignant giant-cell sarcoma was made. The right leg was amputated immediately through the middle third of the thigh. The patient was given four low voltage roentgen treatments postoperatively. The convalescence was uneventful and, at the time of writing of this paper, the patient had had no recurrence and was well (fig. 5).

CASE 6.—A married woman aged 27, seen at the clinic on Dec. 19, 1939, complained of pain and swelling in the distal end of the right thigh of three months' duration.

A preoperative diagnosis of giant-cell tumor of the upper third of the right tibia was made. On Jan. 30, 1940 the tumor was excised and bone grafts were inserted. The pathologist reported a foreign body giant-cell tumor. The convalescence was uneventful, and one year after operation the patient was walking and apparently well (fig. 6).

CASE 7.—A boy aged 13 years, admitted to the clinic on Nov. 8, 1940, complained of pain, swelling and local heat in the lower part of the left tibia of two weeks' duration and stated that he had sustained a single severe injury at the site. A diagnosis of fracture of the lower part of the left tibia with questionable sarcoma had been made elsewhere.

A clinical diagnosis of giant-cell tumor or cyst with pathologic fracture was made. Operation was performed on Nov. 11, 1940, at which time the cavity was thoroughly excised. It was filled with yellowish granulation-like tissue, which was reported by the pathologist as a benign foreign body giant-cell tumor. The fracture was reduced and Parham bands were applied, after which multiple bone chips from the upper portion of the same tibia were packed about the region, completely filling the cavity. The convalescence was uneventful and the patient returned for observation two and a half months later, at which time the Parham bands were removed. The result was excellent (fig. 7).

SUMMARY

Giant-cell tumors may be divided into two groups, the benign giant-cell tumor and the malignant giant-cell sarcoma. These two terms clarify the question of the true nature of the lesion.

Accurate diagnosis and differentiation of benignancy and malignancy require microscopic examination and interpretation of the findings by a competent pathologist.

In tumors that apparently are benign, malignant changes may develop in time after surgical procedures or irradiation, or after a long period.

Treatment of the lesion varies in the individual case, but surgical removal when possible offers a rapid cure and permits an accurate microscopic diagnosis to be made in the majority of cases.

Irradiation has become of increasing value and may be used alone in some cases or as a postoperative adjunct.

The five year survival rate of patients with benign giant-cell tumor who are seen and treated early is 97 per cent, whereas for patients with malignant giant-cell sarcoma it is 65 per cent. The survival rate will be higher when all patients are seen early and the treatment is carried out by those who have had extensive experience with the condition.

The roentgenographic examination gives valuable information as to the location, size and character of the lesion, and the presence of pulmonary metastasis.

ABSTRACT OF DISCUSSION

DR. THEODORE A. WILLIS, Cleveland: My interest in the giant-cell tumor was aroused twenty-two years ago when as a house officer I had the privilege of working in the services of the late Drs. William B. Coley and George Barry. Dr. Coley called these things giant-cell sarcoma and treated them with his bacterial toxins. He reported a number of cures. Dr. Barry, in the other service, was convinced that they were benign. He called them hemorrhagic osteomyelitis and treated them by curettage, by swabbing with phenol and alcohol and by closure. Watching these two men and hearing their arguments back and forth, I became convinced that there were different types of this lesion: that they weren't all malignant and weren't all benign. Soon I had my first personal experience with one. The patient was a young man who had the lesion in the upper end of the radius. I curetted it, swabbed it with

phenol and alcohol and sewed it up. Pathologists at the University Hospital in Cleveland and at the Walter Reed Hospital reported the material a benign giant-cell tumor. Months later the patient came back with a recurrence. I excised the entire upper end of the radius, and he was given radium therapy by a competent radiologist. The pathologic report from that specimen was "osteofibroma; no signs of malignancy." A year later the patient came back again with a recurrence. We amputated his arm. The material went to the same two pathologists and both reported malignant sarcoma and both said that it was the type which did not tend to metastasize. That patient lived several years to my knowledge. He has left the city and I do not know whether or not he is alive, but that same lesion went through these three forms, so reported by competent pathologists. I have been confused at times by the way these things react. The epiphysial type has reacted nicely to roentgen treatment in a number of cases. I am convinced, as Dr. Meyerding pointed out, that there are two types of these so-called giant-cell lesions, one of which is perfectly benign and responds well to thorough curettage and swabbing, and the other, which does not respond to that sort of treatment and does not even respond in my experience to roentgen or to radium therapy.

THE PROGNOSIS OF ACUTE HEMORRHAGIC NEPHRITIS IN CHILDHOOD

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Various divergent opinions of the prognosis of acute hemorrhagic nephritis in children have been explained on geographic regional variations, variations in the general health of the individual at and after the acute attack, different interpretations of observations, and many other bases. Until the obvious procedure of establishing minimum criteria for a healed kidney is utilized and is used uniformly in all studies, this controversy will continue.

Great variations in the evaluation of the prognosis of nephritis do occur when different investigators apply different standards of normalcy. The criteria used in previous studies fall generally into three groups (*a*) those which employ physical examinations, blood pressures and routine urinalysis [1] (table 1), (*b*) those which include one or more renal function tests [2] (table 2), and (*c*) those which include the quantitative examination of concentrated urine (Addis count [3]) with renal function tests done as a routine or whenever indicated [4] (table 3). Snoke [5] was the only worker to use the Addis count repeatedly over an extended period of time (table 4) in addition to the aforementioned procedures.

From 1928 to 1939 there were 110 patients with acute hemorrhagic nephritis in the Post-Graduate Hospital. Four patients (3.6 per cent) died during the initial manifestation of their disease. An attempt was made to contact the remaining patients and have them return for a follow-up study. Thirty-two did return, and these comprise the material for this study. They were subjected to the following procedures: physical examination, blood pressure determination, complete blood count, routine urinalysis and an Addis count, chemical blood examination for urea, nonprotein nitrogen, creatinine, cholesterol, serum albumin and serum globulin, and a urea clearance test.

The group included 19 boys and 13 girls whose ages varied between 3½ and 15½ years. The period of time that had elapsed since the acute manifestation ranged from one to ten and one-half years, with an average of five and four-tenths years. Only 4 patients in the study had had the acute illness less than two years before being examined. This is of considerable importance, since a study of this type should not include any patient having had the acute attack less than one year previously, and it is well known that there may be residual renal changes which will clear entirely before the first year has elapsed.

PHYSICAL EXAMINATION

The physical abnormalities of our patients consisted of dental caries in 2 and soft systolic murmurs at the apex which were considered functional in 5. In the latter group the pulse rate was normal and no cardiac enlargement was present. Since none of these patients had cardiac complications during the acute attack, we feel that this finding has no significance in this study. Even patients who do show clinical evidence of cardiac involvement and failure during the acute attack, though adding immediate danger to life, have a good ultimate prognosis. In a study of 12 such patients, Rubin and Rapoport [6] reported that only 1 showed residual cardiac damage.

BLOOD PRESSURE

Three patients aged 4, 5½ and 8 years respectively showed slight elevation in the systolic pressure. When these readings were rechecked eight months later, the 8 year old child had a blood pressure reading 118 systolic and 70 diastolic. The pressures of the other 2 were normal. Because the blood chemistry, urea clearance and Addis counts were all normal, this hypertension probably has no significance. Hypertension usually closely parallels increases in blood urea and nonprotein nitrogen and is of value mainly in the late latent and terminal stages. We, however, intend to keep the child with the hypertension under observation.

BLOOD COUNTS

Only 1 patient showed any evidence of anemia. This was a 3½ year old child with 3,740,000 red blood cells and a hemoglobin reading of 9.8 Gm. There was no

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1. Schwarz, H.; Kohn, J. L., and Weiner, S. B.: The Prognosis of Nephritis and Nephrosis in Childhood, New York State J. of Med. **40**: 409 (March 15) 1940. Osman, A.: Etiology and Prognosis of Nephritis in Children and Young Adults, Guy's Hosp. Rep. **75**: 306 (July) 1925. Boyd, G. L.: Acute Nephritis in Children, Canad. M. A. J. **17**: 894 (Aug.) 1927. Wyllie, W. G., and Paterson, D.: Nephritis in Children: Its Prognosis, Arch. Dis. Child. **1**: 103 (April) 1926. Lyttle, J. D., and Rosenberg, Lester: The Prognosis of Acute Nephritis in Childhood, Am. J. Dis. Child. **38**: 1052 (Dec.) 1929.

2. James, R. F.: Prognosis of Nephritis in Children, J. A. M. A. **76**: 505 (Feb. 19) 1921. Guild, H. G.: Prognosis of Acute Glomerular Nephritis in Childhood, Bull. Johns Hopkins Hosp. **48**: 193 (April) 1931. Tallerman, K. H. and Burkinshaw, J. H.: Prognosis in Acute Nephritis in Childhood, Lancet **1**: 1255 (June 3) 1939. Smellie, J. M., in discussion on Parsons, L. G.: Acute Nephritis in Childhood, Brit. M. J. **2**: 37 (Aug. 28) 1926.

3. No fluid is given to the child after 4 p. m., and all the urine voided between 8 p. m. and 8 a. m. is collected. Fifteen cc. of this specimen is centrifuged at high speed for ten minutes, 14.5 cc. of the supernatant fluid is pipetted off and 1 drop of the remaining 0.5 cc. placed in a blood counting chamber, and the number of casts, red blood cells and white blood cells in one or more large squares counted. Calculation:

$$\frac{\text{number of squares counted} \times \text{volume of 12 hour specimen} \times 1{,}000}{\text{volume of area counted} \times 30}$$

equals the number of casts, red blood cells and white blood cells per cubic centimeter.

4. Cass, Jean M.: The Ultimate Prognosis of Nephritis in Childhood, Arch. Dis. Child. **14**: 137 (June) 1939. Boyle, H. H.; Aldrich, C. A.; Frank, Albert, and Borowsky, Sydney: The Addis Count in Children, J. A. M. A. **108**: 1496 (May 1) 1937.

5. Snoke, A. W.: Stages, Prognosis, and Duration of Glomerular Nephritis in Childhood, Am. J. Dis. Child. **53**: 1 (March) 1937.

6. Rubin, M. I., and Rapoport, Milton: Cardiac Complications of Acute Hemorrhagic Nephritis, Am. J. Dis. Child. **55**: 244 (Feb.) 1938.

other abnormal finding, and it probably bears no relation to the original nephritis. Presumptive evidence of this lies in the fact that Brown and Roth [7] and Ashe [8] have shown that the anemia in nephritis is directly proportional in intensity to the degree of impairment of renal function, of which this child had none.

TABLE 1.—*Criteria Employing Physical Examinations, Blood Pressures and Routine Urinalysis*

	Number of Cases	Time Observed	Healed	Abnormalities	Comment
Schwarz et al.....	120	1 to 16 years	101 (84.1%)	14 (11.7%)	5 had albuminuria only (4.2%)
Osman.....	56	1½ to 22 years	36 (64%)	20 (36%)	5 had elevated blood pressures only
Boyd.....	44	2 to 5 years	36 (82.8%)	8 (17.2%)	Albuminuria with or without casts
Paterson.....	26	3½ to 5½ years	12 (47.5%)	14 (52.5%)	9 of these had urinary abnormalities only
Lyttle.....	38	1 to 7 years	34 (89.4%)	4 (10.6%)	

URINALYSIS

The urine of 2 patients showed faint traces of albumin, of 2 showed traces and of 2 showed 1 plus albumin. Of the 2 who showed faint traces, 1 had a high white blood cell count in the Addis count with no other abnormality, and the other showed the same conditions plus a chronic genitourinary infection, with an intravenous urogram showing bifurcation of the renal pelvis on the left side. We believe that the albuminuria in both of these cases was due to the pyuria and not to nephritis.

TABLE 2.—*Criteria Including One or More Renal Function Tests*

	No. of Cases	Time Observed	Healed	Abnormalities	Function Test Used	Comment
James	67	3 mo. to 16 yrs.	58 (86%)	9 (14%)	Specific gravity concentration test	Considered only albuminuria significant
Guild	34	1 to 12 yrs.	9 cases of albuminuria only—failed to classify		Phenolsulfonphthalein 2 hr. renal function test; nonprotein nitrogen	
Tallerman	16	8 yrs.	15 (93.4%)	1 (6.6%)	Blood urea phenolsulfonphthalein; urea concentration	Includes in recovery albuminuria but no casts or abnormal cells
Smellie	16	Average 16 yrs.	5 (33%)	11 (69%)	.....	Had either high blood urea and low urea concentration test or enlarged heart and raised blood pressure; urines all normal

The 2 patients showing traces of albumin were reexamined this month and urinalyses, including Addis counts, gave negative results. One patient having 1 plus albumin showed no other abnormality, and we were unable to get this child to return for reexamination. He will have to be followed further before his condition can be classified and until then must be considered as having potential latent nephritis. The other child having 1 plus albumin was recently reexamined and found to have only a faint trace. With all other conditions normal and with the Addis count, including a quantitative estimation of the protein content (0.18 Gm.) within normal limits, we do not believe that this child should be classified as having persistent nephritis.

Persistent albuminuria unaccompanied by any other abnormal finding is, in a study of this type, hard to interpret. The interpretations vary from Guild's [2] liberal feeling that albumin may stay in the urine for years with no damage to the kidney, to the more conservative attitude of Snoke [5] and Schwarz and his associates [1] that children must be further observed and have normal urine before being given a clean bill of health. We agree with the latter opinion. Depending on the interpretation of this finding, evaluation of the prognosis of any series of nephritic patients may be good or extremely bad.

RENAL FUNCTION TESTS

Mosenthal [9] has wisely observed that no one particular test really deserves preference, but a full realization of the significance of these tests will come only to the physician who has carried out and read many observations and has become familiar with them and their many variations. Other investigators have used singly or in combination the phenolsulfonphthalein test, the two hour concentration test, various clearance tests and blood chemistry studies. We used the urea clearance test, since we agree with Mosenthal [10] and Lyttle [11] that it is probably the most accurate way of determining the functioning kidney tissue, and we rechecked these observations with blood chemistry studies to see how efficiently the available kidney parenchyma was eliminating the renal excretory products.

TABLE 3.—*Criteria Including Addis Count*

	No. of Cases	Time Observed	Healed	Abnormalities	Comment
Cass	85	6 mo. to 5 yrs.	56 (60%)	29 (33%)	2 patients in terminal stage of disease
Boyle et al.	25	6 mo. to 8 yrs.	25 (100%)	..	Patients selected from a series of 250 clinically healed postinfectious nephritics; 1 had a high Addis count, with chronic infection of the urinary tract

Van Slyke [12] has shown that the concentration test is more sensitive than the clearance test to slight degrees of renal damage; hence if the concentration test yields a normal result, it is not necessary to measure the clearance. On the other hand, he has shown that the concentration test fails to show the differences between moderate and severe renal damage. If the concentration test yields a urine of low specific gravity, it is necessary to determine also the urea clearance in order to ascertain whether the decrease in excreting power is serious.

7. Brown, G. E., and Roth, Grace M.: The Anaemia of Chronic Nephritis, Arch. Int. Med. **30**: 817 (Dec.) 1922.

8. Ashe, Benjamin: The Hemoglobin Percentage and the Red Blood Cell Count in Bright's Disease, Myocardial Insufficiency and Hypertension, Arch. Int. Med. **44**: 506 (Oct.) 1929.

9. Mosenthal, H. O.: The Diagnosis and Treatment of Variations in Blood Pressure and Nephritis, in Christian, H. A.: Oxford Monographs on Diagnosis and Treatment, New York, Oxford University Press, 1929, vol. 7, p. 298.

10. Mosenthal,[9] p. 300.

11. Lyttle, V. D., in Holt, L. E., Jr., and McIntosh, Rustin: Holt's Diseases of Infancy and Childhood, ed. 11, D. Appleton-Century Company, Inc., 1939, p. 790.

12. Van Slyke, D. D.: Renal Function Tests, New York State J. Med. **41**: 825 (April 15) 1941.

The urea clearance test is especially important since it is recognized [13] that the usual tests for renal function indicate impairment only when from 50 to 60 per cent of the kidney tissue is not functioning.

In all 32 cases we found normal urea clearance and no abnormalities in the chemistry of the blood. This is of special significance, since it is associated with the following Addis counts.

TABLE 4.—*Snoke's Results*

Snoke	From 1920 to 1936—154 patients followed—29 of them for less than two years.
	57 (37%) cured; 33 (21%) died and 64 (42%) still had active nephritis (California).
	Working in Rochester, N. Y., finds only approximately 10 per cent with persistence of urinary changes.

ADDIS COUNT

Snoke [5] has shown that during the latent period of nephritis the child may be in apparent good health and the ordinary renal function tests may indicate normal renal function. He has further shown that in these children a latent nephritis may exist and be revealed only by the quantitative study of concentrated urine (Addis count).

Cass,[4] in her study using the Addis count, showed that 16 patients were actually in the latent stage but clinically were normal and had normal urine on routine examination. Eleven of these even gave normal Addis readings one or more times, and she agrees with Snoke that these counts should be done repeatedly. Boyle and his associates [4] selected 25 patients from 250 clinically healed patients with postinfectious (hemorrhagic) nephritis, and did one Addis count on each. All were normal except one who had a chronic infection of the renal tract.

The contradictory results in these various studies (tables 3 and 4) in which the Addis count was used are probably due partially to the fact that the counts were not repeated over a given period of observation as was done by Snoke. Originally we did one Addis count on each of our 32 patients. As a criterion of normalcy we used the ranges established by Lyttle [14] and Snoke [15] (table 5).

TABLE 5.—*Ranges of Addis Counts of Lyttle and Snoke*

		Average	Minimum	Maximum	Suggested Supernormal
Casts	Lyttle	1,085	0	12,916	10,000
	Snoke	1,230	0	29,000	10,000
White epithelial cells	Lyttle	322,184	9,000	2,822,000	2,000,000
	Snoke	.....	.....	.....	.....
Red blood cells	Lyttle	15,181	0	129,000	600,000
	Snoke	81,600	0	800,000	600,000
Protein (albumin), mg.	Lyttle	18.5	3	47	35
	Snoke	28.5	5	90	55

All of our patients had a normal reading except 2 who had high white blood cell counts. Twenty patients had no red blood cells; the other 12 had red cells ranging from 14,333 to 172,000. None had any casts. The two high white counts were 19 and 20 million respectively, and both patients had a faint trace of albumin with no other abnormality in the routine urinalysis. One patient, as we stated before in discussing urinalysis, had a chronic infection of the urinary tract with a bifurcation of the left renal pelvis. This can account for the high white cell count. The other patient had an accompanying albuminuria, with all other examinations negative, and we feel that this patient has pyuria rather than nephritis. Three of the original 6 patients with albuminuria were reexamined with a second Addis count, all of which were within normal limits.

The use of the Addis technic is impracticable in routine urinalysis but should be employed when the slightest urinary abnormality exists and should be repeatedly done whenever this abnormality persists. It should be a prerequisite before the discharge of a nephritic patient when all other conditions are normal.

SUMMARY

Thirty-two children who had acute hemorrhagic nephritis were studied from one to twelve years after the acute attack. All were essentially normal physically except 1 who had an elevated blood pressure. Routine urinalyses showed originally 6 with albuminuria. Two of these had high white blood cell counts in the Addis readings, which were ascribed to pyuria rather than to nephritis. Two were reexamined eight and ten months later and found to be normal. One patient showed no other abnormality and had two normal Addis counts eight months apart. We think that this patient should not be classified as one having latent nephritis. One patient having no other abnormality refused to return for further study and necessarily must be classed as having potential latent nephritis.

Chemical examinations of the blood for retention of nitrogenous products were all negative. Urea clearance tests on all patients were negative and there was no anemia ascribable to the nephritis.

Addis counts done on all the children were normal, with the exception that 2 had high white blood cell counts that we felt were due to pyuria rather than to nephritis.

No patients were in the terminal stage.

From the evidence in this study and from a review of the literature on this subject it is evident that minimum criteria should be established for a normal kidney before a patient is discharged as cured after an acute attack of hemorrhagic nephritis, and we suggest the following: routine physical examination, blood pressure and urinalysis every three months up to and including two years after the acute attack, and an Addis count done at this time. If during the course of these two years there is the slightest urinary abnormality, the case should be followed at intervals with Addis counts and urinary function tests as indicated. All scientific studies should include the Addis count in following the course of the disease.

Although the evidence we have correlated from this study gives an excellent prognosis to acute hemorrhagic nephritis in this group of children who survived the initial attack, we feel that the outcome of any one case or group of cases is unpredictable.

CONCLUSIONS

1. Of 32 cases of acute hemorrhagic nephritis followed and studied for from one to twelve years after the acute attack, only 1 is possibly in the latent stage of nephritis and none is in the terminal stage.

2. The investigatory work on the prognosis of nephritis should be standardized on the suggested minimum criteria for a healed kidney so that results in various studies may be compared intelligently.

13. MacKay, E. M., and MacKay, L. L.: The Relation Between the Blood Urea Concentration and the Amount of Functioning Renal Tissue, J. Clin. Investigation **4**: 127 (April) 1927. Møller, E.; McIntosh, J. F., and Van Slyke, D. D.: Studies of Urea Excretion: IV. Relationship Between Urine Volume and Rate of Urea Excretion by Patients with Bright's Disease, J. Clin. Investigation **6**: 485 (Dec.) 1928.

14. Lyttle, J. D.: The Addis Sediment Count in Normal Children, J. Clin. Investigation **12**: 87 (Jan.) 1933.

15. Snoke, A. W.: The Normal Addis Sediment Count in Children, J. Pediat. **12**: 473 (April) 1938.

ABSTRACT OF DISCUSSION

DR. JEROME L. KOHN, New York: Drs. Schwarz, Weiner and I have followed at the Mount Sinai Hospital about 230 patients discharged from the pediatric service with a diagnosis of acute hemorrhagic nephritis. These patients were followed from one to twenty years after the onset, the average period of study being four to five years. Of all our patients with acute nephritis 5 per cent died, usually in the first week of illness. Of the patients followed, about 85 per cent seemed to have recovered completely. Of the remaining 15 per cent, slowly progressive chronic nephritis had developed in 5 per cent. Another 5 per cent had what we call nonprogressive nephritis; that is, there was constantly some albuminuria, perhaps slight hypertension but no clinical symptoms. This group has been followed from one to seven years. The remaining 5 per cent we have as yet not classified. Except for occasional albuminuria, they are clinically normal. We have noted what we call the "illness test." By this we mean how well does the kidney withstand infection after an apparent recovery from acute nephritis? During such an illness some children have slight albuminuria and a few red blood cells in the urine. We consider their nephritis as probably not completely healed. If a patient does not have albuminuria, hypertension or an increase in blood urea for one year after the onset there is probably a complete cure. We believe that intensive urinary functional tests are not necessary to give a satisfactory prognosis except in the occasional case in which the prognosis is difficult or when the patient cannot be adequately observed clinically for a long enough period. There are few records of postmortem examination of persons who have had acute hemorrhagic nephritis and died of another illness several years later.

EMBRYOMA OF THE KIDNEY (WILMS' TUMOR)

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Embryoma of the kidney has been classified under various titles according to the predominant cell found at microscopic examination. For this reason it is important to define clearly what is meant by this term. We consider embryoma of the kidney as a highly malignant tumor peculiar to infancy and early childhood. It originates in the kidney and is of probable congenital origin. The tumor grows rapidly at times and assumes enormous proportions. Metastasis takes place by direct extension through its capsule, by the regional lymphatics or by the blood stream to the lung or brain. On gross appearance the tumor is a large encapsulated, grayish white mass encroaching on some portion of the kidney and destroying a greater or lesser part of it by pressure. The remaining portion of the kidney is divided from the tumor by a connective tissue capsule, but it cannot be dissected free from it. Occasionally, malignant nodules are found in this separated portion of the kidney. On microscopic examination one finds the tumor made up of undifferentiated or partially differentiated cells of the epithelial or connective tissue group. One may find in the same tumor epithelial cells, smooth and striated muscle cells and even bone or cartilage. There may be a great variation not only in the cells but also in the degree of activity in various portions of the same tumor. Hemorrhage and necrosis within the tumor sometimes leading to rupture of the capsule are not uncommon, and invasion of the renal vein or renal pelvis also occurs. As the predominance of one type of cell over another has no bearing on the progress of the tumor or the prognosis for the child, the subdivision of these tumors according to the predominant type of cell can serve no useful purpose clinically.

The renal embryoma should be differentiated from the sympathetic neuroblastoma arising either in the medulla of the adrenal or in the retroperitoneal space adjacent to it or rarely in the kidney itself. The neuroblastoma has a different gross and microscopic appearance and the metastasis commonly takes place earlier and to bone rather than to the lung. The hypernephroma or Grawitz tumor occurs so rarely in early childhood that it should not be a source of confusion. We have not seen a tumor of this type in a child under 12 years of age. The one other tumor which might cause difficulty in differentiation is the embryoma of renal anlage which resembles closely the embryoma of the kidney, both grossly and microscopically, but it is not attached to the kidney.

DIAGNOSIS

In the diagnosis of embryoma of the kidney the age incidence is of some significance, as this tumor is primarily a disease of the first three years of life. Our youngest patient was 2 months old and the oldest was 9 years, the average being between the second and third years. The distribution between the two sexes and between the two sides is so nearly equal that it is unimportant. The correct diagnosis is arrived at largely from the clinical history and from palpation of the abdomen, and to a lesser degree by supporting evidence of roentgen examination.

The commonest complaint of the parent or child is swelling of the abdomen and not infrequently the feeling of the mass. Occasionally the child shows loss of weight but more commonly the child remains in an excellent state of nutrition, even in the presence of an enormous tumor. From pressure on adjacent organs these children sometimes have vomiting, abdominal pain, anorexia, irritability or listlessness, but such symptoms are more commonly absent.

On physical examination the tumor can usually be moderately accurately outlined as it is not tender and there is no muscle spasm over it. It feels solid, is not mobile and usually has a smooth and rounded outline extending often to the midline and from the costal border well down into the ileac fossa. Although gross or microscopic hematuria is not an uncommon finding, it is not frequent enough to be in any sense pathognomonic and, in fact, normal urinary conditions are more usual.

Pyelography may and, as a rule, should be used as an aid to diagnosis, but there is no distortion of the renal pelvis sufficiently characteristic to be positively indicative of embryoma. In an embryoma of the kidney the renal pelvis is commonly displaced upward or downward according to the position of the tumor, and it is sometimes pushed toward the midline. In a retroperitoneal neuroblastoma the pelvis may be displaced laterally, but there is not enough uniformity in either of these conditions to be able to differentiate the two by the pyelogram alone. Of course if one cannot differ-

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From the Surgical Service of the Children's Hospital and Department of Surgery, Harvard Medical School.

In the preparation of this paper one hundred and sixteen articles on Wilms' tumor were reviewed. Only those articles quoted in the text are mentioned.

Read before the Section on Surgery, General and Abdominal, at the Ninety-Second Annual Session of the American Medical Association, Cleveland, June 5, 1941.

entiate between the new growth of the kidney and hydronephrosis or pyelonephrosis, the pyelogram will settle the question. The real merit in pyelography in a case of suspected embryoma, however, is to determine the presence and normality of the kidney of the opposite side. Since embryomas occur most commonly in the age group requiring a general anesthetic for retrograde pyelography, we are commonly satisfied with the data obtained by the intravenous method. By using this method and avoiding a general anesthetic, less delay is occasioned than by a cystoscopic examination. It is of paramount importance to make the diagnosis of embryoma as early in life as possible, as from our experience the younger the patient the better is the chance of cure. The number of cures that we can anticipate in the future is therefore dependent to some extent

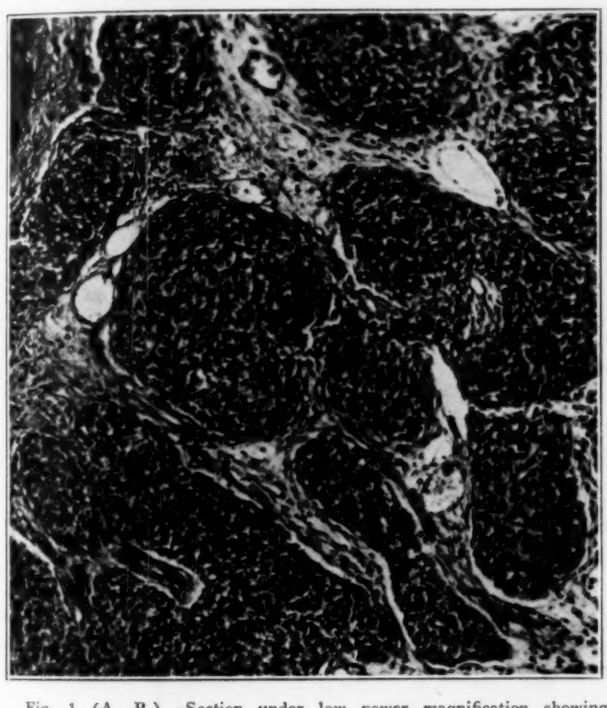

Fig. 1 (A. R.).—Section under low power magnification showing typical appearance of an embryoma of the kidney. The specimen was taken for biopsy from a mass involving the right kidney, Jan. 27, 1938 of a patient with bilateral embryoma.

on the alertness of the pediatrician and of the family physician and their realization of the existence of this extremely malignant tumor of early life.

We abandoned the practice of aspiration biopsy many years ago. It is unreliable and may cause implantation recurrence or set cells loose into the blood stream to result in remote metastasis. The danger of malignant cells entering the blood stream is a real one, and every precaution should be taken to avoid its occurrence. On a theoretical basis rough or frequent palpation of the tumor is contraindicated.

Other intra-abdominal tumors that occur in this age group are ovarian tumors, splenomegaly, omental cysts, duplications of the alimentary tract and new growth of the liver, but they all have characteristics sufficiently definite to make their differentiation possible.

PREOPERATIVE IRRADIATION

There is no uniformity of opinion about the merits of preoperative irradiation, although its employment has been widely advocated. The advantages and disadvantages of this form of therapy should be carefully considered. Almost all surgeons and roentgenologists are agreed that this tumor is usually quite radiosensitive, that its size may be diminished by a comparatively short course of roentgen therapy and that the operative procedure may be somewhat facilitated thereby. Also, prac-

Fig. 2 (A. R.).—Same specimen as shown in figure 1 under high power magnification.

tically all surgeons and pathologists are agreed that no case of proved embryoma has been cured by roentgen therapy. In every specimen that has been examined following roentgen therapy viable cells have been in evidence.

Does roentgen therapy hinder or prevent metastases? There is no evidence that it does. In fact, on a theo-

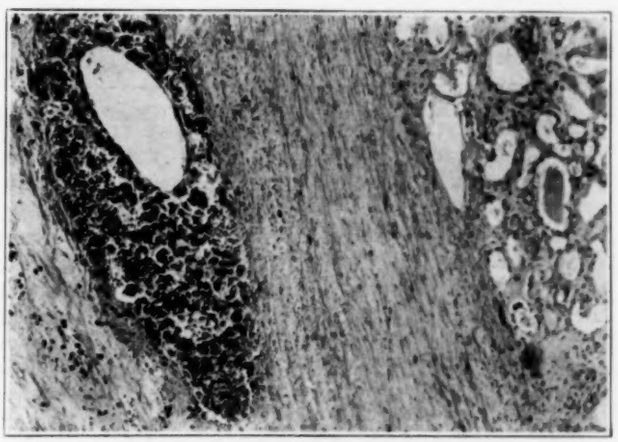

Fig. 3 (A. R.).—Specimen of same kidney and tumor outside kidney shown in figures 1 and 2 removed at autopsy Sept. 5, 1938 after 9,600 roentgens had been given in radiation therapy. Viable tumor cells are still present.

retical basis it might facilitate rather than hinder metastasis. It is known that the effect of irradiation is first to soften the tumor and then to contract it by the replacement of some of the cellular elements with connective or scar tissue. During this period of change it

would seem at least logical to presume that malignant cells might enter the blood stream quite as easily, if not more easily, than if the changing process had not been caused by the roentgen treatment. Regardless of the accuracy or inaccuracy of this theoretical conjecture, we will defy anybody to prognosticate when metastasis is going to take place. In instances in which patients have died of remote metastasis and have shown no local metastasis at postmortem examination it is fair to assume that the metastasis had taken place prior to operation and that the child's life might have been saved had the operation been performed a month, a week or even a day earlier. In some instances we actually have found tumor cells floating in the blood stream of the renal vein at the time of operation. In instances in which the patients have been cured, presumably the operation was performed before metastasis had taken place. If the foregoing statements are correct, one would expect to find that more patients with embryoma have been cured without the use of preoperative roentgen therapy than with it.

In a very extensive review of the literature we have found 563 cases reported with 26 cures in which it was specifically stated whether or not preoperative roentgen therapy had been used. Of these only 8 patients had received preoperative roentgen treatment. In our own series the contrast is even more striking—only 1 of 14 patients with probable cure had received preoperative irradiation. From a statistical point of view, then, it can be stated that the chance of survival for a patient with embryoma of the kidney is far greater if the policy of immediate operation is adopted rather than the policy of delayed operation following roentgen therapy.

The only argument left in favor of employing preoperative irradiation is that the operative mortality is high and that this complimentary therapy reduces it. While it is true that in some other clinics, as well as in our own, in the past the operative mortality was high, in recent years this situation has been changed. In the days when we attempted these operations by the posterolumbar incision, when knowledge of fluid balance was limited and when the use of transfusion was only occasional, our operative mortality was very high. In the last eight years, however, with the adoption of the transperitoneal approach and with improved technic in preoperative and postoperative treatment, we have performed 23 nephrectomies for renal embryoma with no operative mortality. The last operative death occurred in 1932. We define operative mortality as any death which takes place while the patient is in the hospital.

OPERATIVE TECHNIC

Perhaps the most important feature of the operative technic is that it should be done as soon as a probable diagnosis can be made and the patient properly prepared. Since a general anesthetic is indicated, we elect the use of ether. The transperitoneal approach has many advantages over the retroperitoneal approach through a posterolumbar incision. Whether this transperitoneal approach is done through a vertical or a transverse incision is immaterial except that in the common large tumors—extending to or beyond the brim of the pelvis—the vertical incision is preferable. We usually use a vertical incision. After the anterior parietal peritoneum has been opened, the ascending or descending colon according to the side on which the tumor exists is packed toward the midline and an incision is next

TABLE 1.—*Number of Probable Cures by Two Types of Treatment*

Author	Year	Number of Cases	Nephrectomy With Preoperative Irradiation	Nephrectomy Without Preoperative Irradiation	Irradiation Not Stated
Schmid, H.: Beiträge zur Chirurgie der Nieren, München. Med. Wchnschr. **15**: 254, 1892	1892	2	0	1	0
Israel, J.: Erfahrungen über Nierenchirurgie, Arch. für klin. Chir. **42**: 302, 1894	1894	3	0	2	0
Abbe, R.: Sarcoma of the Kidney: Its Operative Treatment, Ann. Surg. **19**: 58, 1894	1894	1	0	1	0
Muus, N. R.: Ueber die embryonalen Mischgeschwülste der Niere, Virchows Arch. f. path. Anat. **155**: 401, 1899	1899	6	0	1	0
Jenckel, A.: Beitrag zur Kenntniss der sogenannten embryonalen Drüsengeschwülste der Niere, Deutsche Ztschr. f. Chir. **60**: 502, 1901	1901	1	0	1	0
Abbe, R.: Long-Lasting Cure after Removal of Sarcoma of Kidney in Infancy, Ann. Surg. **56**: 469, 1912	1912	1	0	1	0
Loughnane, F. M.: Renal Sarcoma of Infancy with a Record of Thirty-Five Cases, Brit. J. Surg. **2**: 77, 1914	1914	35	0	0	4
Hyman, A.: Tumors of the Kidney, Tr. Am. Urol. A. **12**: 242, 1920	1920	8	0	0	1
Magoun, J. A., and MacCarty, W. C.: Malignant Neoplasia of the Kidney Occurring in Infancy, Surg., Gynec. & Obst. **36**: 781 (June) 1923	1923	7	0	0	1
Wollstein, M.: Renal Neoplasms in Young Children, Arch. Path. **3**: 1 (Jan.) 1927	1927	18	0	0	2
White, W. C.: Wilms' Mixed Tumor of the Kidney, Ann. Surg. **94**: 139 (July) 1931	1931	9	0	2	0
Coley, W. B.: Wilms' Tumor, Am. J. Surg. **29**: 463 (Sept.) 1935	1935	2	0	1	0
Prather, G. C., and Friedman, H. F.: Immediate Effect of Preoperative Radiation in Cortical Tumors of Kidney, New England J. Med. **215**: 655 (Oct. 8) 1936	1936	1	1	0	0
Campbell [2]	1937	37	1	1	0
Stern, R. O., and Newns, G. H.: Wilms' Embryoma: Clinico-Pathological Study, Arch. Dis. Childhood **13**: 193 (Sept.) 1938	1938	26	0	0	3
Kretschmer [4]	1938	24	1	1	1
Long, L. W.: Wilms' Tumors: Embryonal Adenosarcomas of Kidney, South. M. J. **32**: 1016 (Oct.) 1939	1939	13	1	1	0
Priestley [1]	1939	37	1	3	0
Kaplan, I. I., and Campbell, M. F.: Treatment of Wilms' Tumor: Report of Case, Arch. Pediat. **56**: 766 (Dec.) 1939	1939	1	1	0	0
Higgins and Shively [3]	1941	26	2	2	0
Children's Hospital series	1941	60	1	13	0
Total		318	9	31	12

TABLE 2.—*Mortality in Wilms' Tumor: The Children's Hospital Series*

	1914-1923	1923-1932	1932-1941
Total number of cases	13	17	30
Total mortality	92.0%	70.5%	60.0%
Operative mortality	23.0%	23.5%	3.3%

made in the posterior peritoneum over the tumor or renal pedicle. The renal pedicle and ureter are next carefully exposed, tied and cut before any attempt is made to mobilize the tumor and attached kidney. We believe that doing this step in the operation first is

Fig. 4 (S. S.).—Section from a recurrent tumor which had been treated by roentgen rays, showing tumor cells embedded in a fibrous tissue background.

of prime importance. It results in the loss of much less blood and minimizes the danger of pushing malignant cells into the blood stream in the process of handling the tumor. The tumor is next mobilized and removed with as much perirenal fat as possible, especially that about the renal pedicle, as this contains the lymphatics in which recurrence may take place. The large raw surface of the posterior abdominal wall is now covered over with peritoneum when feasible or disregarded if not feasible. The abdominal wound is next closed in layers without drainage. In the postoperative care morphine is given in adequate doses and parenteral fluids or transfusion given as indicated.

We abandoned the use of the posterolumbar incision many years ago for the following reasons: It is extremely difficult or even impossible to remove some of these tumors through such an incision. It is possible that some tumors are classed as inoperable because they are approached by this route. Since adopting the transperitoneal approach, we have not considered any case inoperable and have successfully operated in at least 1 case in which the weight of the tumor was one fourth that of the child. We think that more blood is apt to be lost when the tumor is approached by the posterolumbar route. When this incision is used, the kidney must be handled before the renal pedicle is tied and the possibility of spreading malignant cells into the blood stream must be increased. We believe that our lack of mortality in the last eight years is due largely to adopting the transperitoneal approach and to the increased facility which this approach gives in handling the renal pedicle and in removing the tumor.

POSTOPERATIVE IRRADIATION

The difficulty in evaluating the merits of postoperative irradiation is even more appreciable than that of evaluating the merits of preoperative irradiation. We have been unable to find in the literature a sufficient number of cases in which it was stated that postoperative irradiation had been used to make the numbers of any statistical significance. Our own experience with this form of therapy has also been too limited to be of much value. We can state, however, that roentgen therapy on a recurrence apparently has a similar reaction to that on the original tumor, namely that it shrinks the tumor but does not destroy all the cells. All specimens of a recurrent tumor that have been irradiated and later have been examined have shown viable cells. We have no patient who has had a recurrence and who has survived. From this experience it would seem logical to deduce that one cannot cure a recurrent embryoma by roentgen therapy any better than one can cure the original tumor. One must, therefore, consider postoperative irradiation only from the point of view of prophylaxis against recurrence.

If one is going to use this form of therapy for this purpose, the most suitable parts of the anatomy to irradiate would be the abdomen, the lungs and the brain. It is doubtful whether sufficient doses of roentgen rays could be given to these areas so as to destroy at once the malignant cells which might have lodged there without giving so much that it would destroy the child. For the present it must be stated that there are insufficient data available to evaluate the merits of postoperative roentgen therapy and that if it is used

Fig. 5 (S. S.).—Same section shown in figure 4 under high power magnification. Note that viable and numerous striated muscle tumor cells are still present.

it is on the vague chance that it might destroy some cells which otherwise would grow to form a lethal recurrence. One might add that the use of postoperative roentgen therapy does not have the disadvantages of preoperative irradiation, namely delaying the operation beyond the time at which the cure may be obtained.

PROGNOSIS

The statement is commonly found in the literature that the mortality of embryoma of the kidney is between 90 and 100 per cent. From our extensive review of the literature, this estimate seems to be quite accurate as the mortality of the combined results of numerous clinics. Among the larger series that have been reported

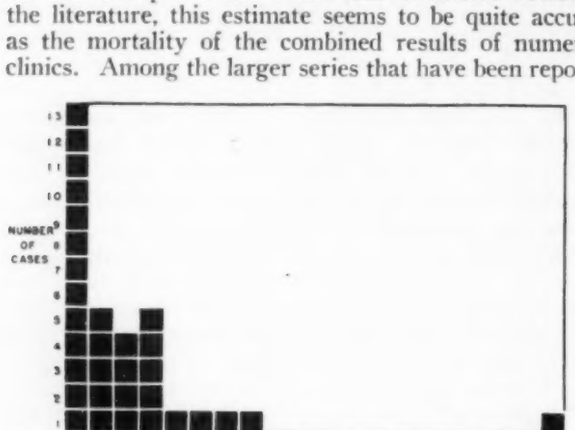

Fig. 6.—Time of recurrence of Wilms' tumor (postoperative) in the Children's Hospital series.

recently may be mentioned those of Priestley [1] in 1939 with 37 cases and 4 cures, Campbell [2] in 1937 with 37 cases and 2 cures, Higgins and Shively [3] in 1941 with 26 cases and 4 cures and Kretschmer [4] in 1938 with 24 cases and 3 cures.

Our own series comprises 60 patients, 18 of whom are still living; 14 of these have probably been cured while 4 have been operated on too recently to be so classified. Of these 4 patients, 3 are considered as having a very hopeful prognosis and 1 as having a hopeless outlook, since there is a bilateral tumor.

Are there any factors in the particular case which give a clue as to the probability of recovery or cure? It is frequently stated that the size of the tumor bears a direct relation to the mortality. Our experience does not coincide with this statement, as some of our patients with the largest tumors are among those cured, while some of the patients with the smaller tumors have had early metastasis and a fatal outcome.

We have been unable to correlate any relationship between the predominant type of cell and the chance of cure. In our series there appears to be a relationship between the age of the patient and the curability.

TABLE 3.—*Embryoma of the Kidney (Wilms' Tumor): The Children's Hospital Series*

Total number of cases	60
Number of deaths	42
Operative	8
Metastases	32
Unrelated	2
Number of probable cures	14
Number of hopeful cases	3
Number of hopeless cases	1

Of 16 cases occurring in the first year of life, 50 per cent resulted in cure. Gross hematuria which occurred in 10 of our patients was a bad sign, as all the patients with this condition died. Also, the patients in whom the tumor had invaded the renal vein had a fatal result.

In the vast majority of cases recurrence is detectable by the end of four months so that if no evidence of recurrence or metastasis is demonstrable at this length of time we become hopeful about the ultimate result. Twenty months is the longest time that a patient has gone without showing signs of recurrence and then had it develop, and this happened in 1 instance only. In our series there were 32 recurrences; 31 of these took place prior to the ninth month after operation. We have had no patient who has gone for two years without recurrence in whom it has later developed. In this particular form of malignant tumor, therefore, it is reasonable to consider a patient as probably being cured who has survived for two years after operation without evidence of recurrence.

Table 4 shows the number of patients probably cured and the duration of their cure out of a series of 60 patients treated at the Boston Children's Hospital. The first 11 of the 14 probable cures listed in table 4 were previously reported by one of us.[5]

TABLE 4.—*The Late Results of Nephrectomy for Renal Embryoma*

Cases	Sex	Age	Nephrectomy	Well After Operation For
A. Probable Cures				
1	♂	5 months	Left	20 years
2	♀	31 months	Right	15 years 7 months
3	♂	10 months	Left	12 years 10 months
4	♀	12 months	Right	10 years
5	♀	5 months	Left	9 years 10 months
6	♀	5½ years	Right	9 years 6 months
7	♂	22 months	Right	8 years 2 months
8	♀	7 months	Right	7 years
9	♀	10 months	Left	4 years 7 months
10	♀	8 months	Right	4 years 1 month
11	♀	5½ years	Left	3 years 3 months
12	♂	5 months	Left	2 years 5 months
13	♂	13 months	Right	2 years 2 months
14	♂	4 yr. 1 mo.	Right	2 years 1 month
B. Possible Cures				
1	♂	2 yr. 6 mo.	Left	9 months
2	♀	2 yr. 2 mo.	Right	7 months
3	♂	3 yr. 11 mo.	Left	3 months

CONCLUSION

The results of a review of the literature and our experience lead us to conclude that in the treatment of embryoma of the kidney:

1. The operative mortality should be negligible.

2. The transperitoneal approach is safer and is to be preferred to the posterolumbar retroperitoneal approach.

3. If operation is performed as soon as the diagnosis is made, the chance of curing the patient is greater than if it is delayed until after roentgen therapy has been given.

4. Insufficient data are available to permit evaluation of the merits of postoperative roentgen therapy.

300 Longwood Avenue.

ABSTRACT OF DISCUSSION

DR. JAMES T. PRIESTLEY, Rochester, Minn.: The results which Drs. Ladd and White have reported are definitely superior to any others recorded in the literature. This fact in itself speaks for their methods of treatment. The important point discussed by the authors, concerning which divergent opinions exist, pertains to the value of irradiation in the treatment of Wilms' tumor. Drs. Ladd and White object to preoperative irradiation because metastasis might occur during administration of roentgen therapy. That preoperative irradiation does facilitate surgical removal of the tumor by decreasing

1. Priestley, J. T.: Survival Following Removal of Malignant Renal Neoplasms, J. A. M. A. **113**: 902 (Sept. 2) 1939.
2. Campbell, M. F.: Primary Malignant Tumors of the Urogenital Tract in Infants and Children, J. A. M. A. **109**: 1606 (Nov. 13) 1937.
3. Higgins, C. C., and Shively, F. L., Jr.: Malignant Renal Neoplasms in Children: Review of Twenty-Six Cases, Arch. Surg. **42**: 386 (Feb.) 1941.
4. Kretschmer, H. L.: Malignant Tumors of the Kidney in Children, J. Urol. **39**: 250 (March) 1938.
5. Ladd, W. E.: Embryoma of the Kidney (Wilms' Tumor), Ann. Surg. **108**: 885-902 (Nov.) 1938.

its size is a definite advantage to most surgeons. In order to determine what effect irradiation might have on ultimate results, a recent review has been made of all cases of Wilms' tumor in which nephrectomy was performed at the Mayo Clinic prior to 1937. This permits of a follow-up period of five years in order to determine end results. According to the experience of Drs. Ladd and White, a two year follow-up should provide adequate information in this regard. Although the number of cases in this series is too small to permit definite conclusions, some suggestive evidence with regard to the value of irradiation may be obtained. There were 39 patients in all, 6 of whom have survived five years or more after operation, a survival rate of 15 per cent for this period. There were 13 patients on whom nephrectomy alone was performed; 1 of these (8 per cent) survived five years or more. There were 3 patients for whom preoperative irradiation and nephrectomy were employed; not one of these is living at present. There were 11 patients for whom nephrectomy and postoperative irradiation were employed; 2 of these (18 per cent) have survived to the present time. There were 12 patients for whom preoperative irradiation followed by nephrectomy at an appropriate time and subsequently postoperative irradiation were employed; 3 of these (25 per cent) are still living. From this limited experience irradiation seems to enhance ultimate results when utilized in association with nephrectomy in the treatment of Wilms' tumor. It should be emphasized that irradiation alone without surgical intervention does not constitute adequate treatment for these lesions. Perhaps it would be well to compromise and utilize preoperative irradiation only when the tumor is so large when first examined that nephrectomy would be difficult or almost impossible. If a small Wilms' tumor, which unfortunately is seldom seen, should be encountered, perhaps one could proceed directly with nephrectomy. In all cases it seems advisable to me to use extensive postoperative irradiation.

DR. MONROE WOLF, New Orleans: The rarity of this condition in early childhood may be cited by presenting the incidence in two of New Orleans' largest hospitals, Charity Hospital and Touro Infirmary. At Touro Infirmary for the period January 1933 through April 1941 there was a total admission of 86,022 patients, 4 with Wilms' tumor, 2 each white males and white females. Two of these patients were apparently well three years after operation, an unusually high incidence of apparent cure. At Charity Hospital from July 1, 1937 until May 1, 1941 the total admission was 230,300 patients, of whom 6 had Wilms' tumor, 2 white male, 1 white female, 1 Negro male and 2 Negro females. Three of these patients were admitted during the past three months. There have been no three year survivals in this series. As a urologist I wish to impress the difficulty in differentiating these tumors from an extrarenal retroperitoneal new growth.

DR. WILLIAM E. LADD, Boston: Dr. Priestley apparently has in mind the danger that somebody will consider that the sole treatment for embryoma of the kidney is roentgen therapy, and I think he is wise in bringing that point to our attention. There is an added danger in this regard because it is sometimes difficult to differentiate between the retroperitoneal blastoma and the embryoma of the kidney. The neuroblastoma is rather a strange tumor; there are on record a certain number of cases of neuroblastoma that have been cured by roentgen therapy, and there are a few cases—Dr. Cushing reported 1 many years ago—that have regressed without any treatment. We have had 1 patient at Children's Hospital, and we have 5 or 6 more who are well after many years following roentgen therapy. But we would not give roentgen therapy without being sure of our diagnosis. I think it is a great mistake ever to give roentgen therapy for any of these abdominal tumors unless one knows what one is treating. Regarding the pyelograms that Dr. Wolf showed, we have a feeling that the neuroblastoma, the retroperitoneal blastoma, is a little bit more likely to push the renal pelvis laterally, whereas the embryoma is more apt to push it medially, upward or downward. There are enough exceptions so that I don't believe one can differentiate between the two by the pyelogram alone.

LEGAL AND THERAPEUTIC ASPECTS OF SYPHILIS AND PREGNANCY

CHARLES H. PECKHAM JR., M.D.
COOPERSTOWN, N. Y.

More than twenty-five years have elapsed since the first legal attempt was made to control the transmission of venereal disease from one partner in marriage to the other. This early legislation was faulty and failed to produce the desired result, since it did not apply to both sexes and did not require microscopic or serologic tests as aids in diagnosis. In the last five years the public has been made violently conscious of the venereal disease problem (and particularly so with regard to syphilis) both from the standpoint of the individual and from that of the community, the state and the nation as a whole. Partly because of this and partly because public health authorities have instituted an active anti-venereal disease campaign, many state legislatures have enacted statutes to forbid the issue of marriage licenses to persons suffering from such diseases unless it was felt that the condition is not communicable. As a natural corollary to this effort, laws have also been passed requiring that physicians perform a serologic test for syphilis on all pregnant women under their care. The first of the new premarital examination laws went into effect in Connecticut in 1936. At present thirty-one states have enacted some sort of similar legislation, while in twenty antepartum examination laws are in effect. It seems of particular interest that all this legislation has been passed chiefly through the efforts of lay organizations and that physicians, both individually and as a group, rarely have been consulted as to the content of the law or its probable effects. Indeed the subject has become one of considerable acrimonious debate among physicians and venereal disease authorities as well.

A brief discussion of the premarital examination laws may first be undertaken. These laws differ in many ways. Some require clinical and microscopic examinations in an effort to establish or rule out the presence of gonorrhea. Except when there are obvious signs and symptoms the diagnosis of this condition at the present time is so unreliable as to leave little to recommend its inclusion in a statute. A false positive diagnosis is made infrequently, and a true positive reaction is missed in the majority of cases. With syphilis the situation is considerably different. Examination by a licensed physician of both the prospective bride and the prospective groom, including serologic tests for syphilis, is required in twenty states. Four states require examination of the groom only. Six other states prohibit the marriage of persons with venereal disease, some of them requiring a personal affidavit as to freedom from infection but making no specification as to examination.

Obviously many premarital examination laws have been passed hastily and without due regard to the transmission of syphilis as it is understood by syphilologists. It follows that they not only will fail to attain the desired end but will render all such legislation, both present and future, unpopular with the public.

The American Social Hygiene Association, one of the most important agencies sponsoring legislation

From the Mary Imogene Bassett Hospital.
Read before the Section on Obstetrics and Gynecology at the Ninety-Second Annual Session of the American Medical Association, Cleveland, June 4, 1941.

governing premarital examination, recognizing the many defects in present statutes, has recently suggested a so-called ideal law.[1] This law, for reasons previously stated, is limited to syphilis. It requires that both applicants for a marriage license be examined for syphilis by a licensed physician. The examination should be both clinical and serologic, the serologic test being of a type approved by the state health department. The tests should be made not more than thirty days before the license is applied for, and the license when issued should be valid for not more than sixty days. The blood test should be done without charge on request through the local health department. The filing of a certificate by a physician and the laboratory statement may be waived by the judge of a proper court because of an emergency or for some other cause. With this rare exception, the physician must file a certificate of examination accompanied by the report of the laboratory test, which includes the name and the address of the applicant, the date and type of test but not the result. The result of the test should be sent to the physician, who forwards it to the health department to be filed and to be used only if further action is necessary to protect the public health. The decision as to issuance of the certificate giving permission for the marriage license should be in the hands of the physician, and he may certify the applicant, even though the test gives positive results, if he does not feel that the disease is infectious. Otherwise treatment must be given and the immediate issuance of the certificate refused. The licensing authority should attach to the license a statement that the applicants have conformed with the law. The person performing the marriage must return the certificate and the marriage license together with his own affidavit. Finally the "ideal law" provides a penal clause and an appropriation to the state health department to cover necessary expenses.

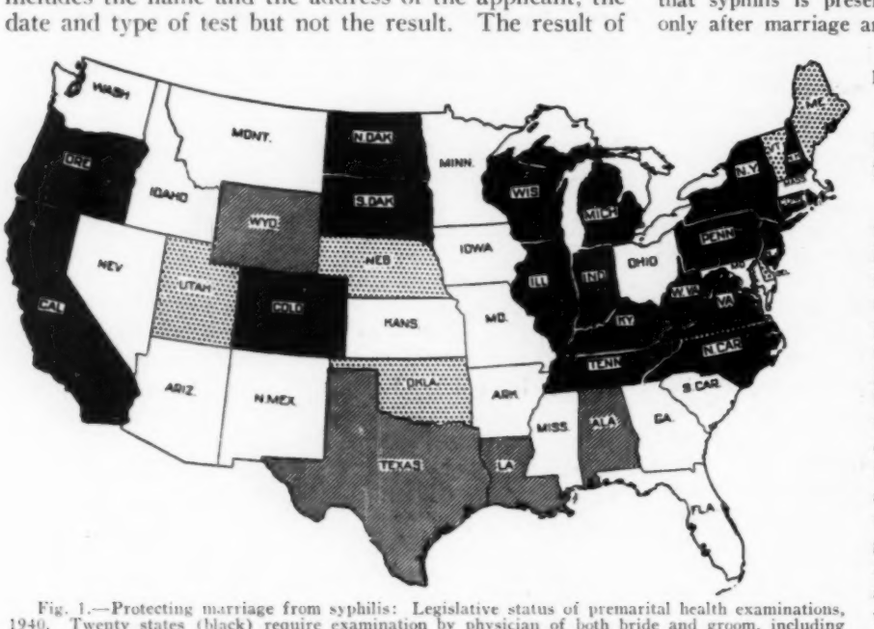

Fig. 1.—Protecting marriage from syphilis: Legislative status of premarital health examinations, 1940. Twenty states (black) require examination by physician of both bride and groom, including blood test for syphilis. Four states (shaded) require examination by physician of groom only for freedom from venereal diseases. Six states (stippled) prohibit marriage of persons with venereal diseases; some require personal affidavit of freedom from venereal diseases, no examination specified. (From the American Social Hygiene Association, Inc., 1790 Broadway, New York, Oct. 1, 1940.)

As has been stated, many arguments have been offered, both pro and con, as to the advisability of premarital examination laws. It seems proper to summarize these briefly. Proponents of such legislation have advanced the following points:

1. Syphilis is frequently transmitted through marriage when one partner is infected. Frequently the diseased person is unaware of his or her infection. The vast majority of pregnant women found repeatedly to have a positive serologic reaction give a history completely negative for signs and symptoms of syphilis.

2. The most valuable single means of diagnosing syphilis, particularly as far as the general practitioner is concerned, is the serologic test.

3. Premarital blood tests will reduce the incidence of the transmission of syphilis to the spouse and to the children.

4. Untreated syphilis not infrequently results in the incapacitation or early death of one partner. Both partners should be aware of this possibility before marriage. If incapacitation results, support for the family may have to come from public funds, and thus the problem may become of interest to the state from the standpoint of relief. Furthermore, the knowledge that syphilis is present in one spouse frequently is obtained only after marriage and often results in divorce.

5. Premarital tests will encourage prompt and thorough treatment of syphilis.

Arguments against premarital legislation may be summarized as follows:

1. Serologic tests for syphilis may give nonspecific or falsely positive results. Leprosy, malaria and acute infectious mononucleosis frequently cause positive serologic reactions. More rarely, false positive reactions have been recorded in the presence of tuberculosis, neoplasms, jaundice and fever. As has been stated by one authority:[2] "To deny a man or woman the license to marry on the evidence of a positive blood reaction alone is risky and seriously open to criticism and objection. In the absence of clinical manifestations or a history at least suggestive of syphilis . . . the serologic test should be indisputable and based not on a single but on at least two positive reactions by two or more methods."

2. Positive reactions alone do not always indicate a danger to marriage. This is especially true if the disease is of long standing or has been thoroughly treated. The question as to whether a person is or is not infectious to his partner in marriage frequently baffles the specialist and hence is one on which the general practitioner is usually incapable of deciding.

3. Withholding permission to marry will have little effect on the class of society in which the incidence of syphilis is highest and will result in common law marriages and sexual promiscuity.

4. In the incubation period and the primary stage of syphilis the serologic reaction is often negative. Many men feel they must have a last fling before settling down and may contract syphilis between the time of the blood test and the marriage itself.

5. Emphasis on the legal rather than the medical approach to control is a danger. Premarital examination laws are the forerunners of other laws. The problem of tuberculosis has been well solved without legislation. If marriage is to be under legal control, why not do the job completely and legislate against even greater problems, such as feeblemindedness?

An effort to assay the value of premarital examination legislation will now be made with respect to

1. Johnson, Bascom: J. Soc. Hyg. **24**: 477 (Nov.) 1938; **25**: 285 (June) 1939.

2. Kolmer, J. A.: Laws Requiring Premarital and Pregnancy Tests for Syphilis: Reasons For and Against, J. A. M. A. **112**: 2385 (June 10) 1939.

the number of cases in which previously undetected venereal disease is diagnosed, the outcome in cases in which a marriage license is refused and the opinion of the agency administering the law, namely the health department. In May 1940 Mary Edwards published a summary of 631,206 serologic tests done in fourteen states under the new laws. Definitely positive results were obtained in 8,605 instances, or 1.4 per cent. It was estimated that from 70 to 90 per cent of the persons with positive reactions had been previously unaware of their infection. The incidence of positive reactions was about equal for the two sexes, while the ratio of Negroes to white persons varied between 7 to 1 and 20 to 1. Slightly more than half of the total group with positive serologic reactions were granted marriage licenses on the basis of noncommunicability of their disease. Few figures are available as to the behavior of persons refused licenses. A report from New Jersey on 113 applicants states that 71 did not marry, 18 married in other states and the remainder could not be found. Furthermore, more than half were under treatment three months later. It seems to be common experience that the marriage rate in most states rises sharply just before the law goes into effect and falls equally rapidly afterward. This decline, however, has not been found to last more than one or two years, when it rises again to the previous normal rate. It has not been possible for me to seek an expression of opinion as to the advantages and disadvantages of premarital examination laws from the standpoint of the directors of health in the several states employing them. However, I have gathered that their approval is in direct proportion to the closeness with which their state law approximates the so-called ideal law, which has already been cited. Furthermore, it is difficult for me to frame an exact statement of my personal opinion. Every physician will agree that the intent of premarital examination laws, to prevent the spread of syphilis through marriage, is completely appropriate and necessary. The difference of opinion comes as to the manner by which the end may be achieved. Must it be by prohibitive legislation or can it be best accomplished by the medical profession itself with the aid of enlightened public opinion? It seems proper to end this portion of the discussion by quoting briefly from two eminent specialists in venereal disease. J. E. Moore,[3] of Baltimore, stated that

> emphasis on the legal rather than on the medical approach to the control of syphilis is likely . . . to do . . . more harm than good. Reform by legislative fiat is a procedure which the American people have more than once adopted as a panacea, only quickly to tire, not only of the law itself but of the end at which it was aimed. . . . Perhaps this type of legislation is desirable in the Utopian state, . . . but so far it has not been the American way.

Secondly, Nelson,[4] of Boston, has summarized his opinion as follows:

> Premarital examination, not only for syphilis but for all conditions which make marriage unwise and unsafe, will amount to something and will be conducted on an honest basis when candidates for marriage go to their doctors because they really want to be examined, tell the truth, submit to thorough physical examinations, and accept the physician's opinion as the best opinion that he can give, not as a guaranty. In the meantime, it is unjust to permit the public to think that it is getting something which cannot possibly be delivered and to put the medical profession in the position of having to swear to the truthfulness of the applicant and the accuracy of the laboratory, and of having to stretch an opinion until it becomes a certificate.

Antepartum examination legislation has created much less argument among physicians and health officers. The laws refer only to syphilis and are practically identical in the various states possessing them. The American Social Hygiene Association has suggested an "ideal law" for antepartum examination also.[1] It is brief and states that a serologic test for syphilis must be made at the time of the pregnant woman's first visit to her physician. The test must be a standard one done in an approved laboratory. On request, the examination will be made without charge by the local health department. The birth certificate of the child should state whether the test has been made; if it has, the date, and if it has not, the reasons why, should appear. The result of the test should not appear on the certificate. Arguments in favor of such a law are:

1. Blood tests during pregnancy represent an excellent method of case finding. Provided a sensitive method is used, it may be said that a definitely positive reaction, verified on repetition, is indicative of syphilis regardless of the history or physical status.

2. The detection of syphilis and its prompt treatment during pregnancy will reduce to a minimum the danger of the offspring being born with congenital stigmas. As a corollary, this often results in more treatment for the woman, since many asymptomatic persons lapse in their treatments between pregnancies but are willing to submit to them while pregnant in order to protect the unborn child.

3. A positive serologic reaction during pregnancy places the physician on the alert and increases the likelihood of repeated examination after birth of the child who otherwise might be neglected in this regard.

4. The detection of syphilis in the pregnant woman will lead to its detection and treatment in other members of the family.

Arguments against antepartum serologic tests are merely the danger of false positive reactions and the fact that the woman who suspects that she has syphilis may go without care or be delivered by a midwife.

Few figures are available as to the practical results of antepartum tests. A report from New Jersey stated that in 1.38 per cent of 19,752 serologic examinations done on pregnant women the results were positive. At the Johns Hopkins Hospital positive reactions were obtained in about 2 per cent of white clinic patients as contrasted with 20 per cent of Negroes. It should be stated that at this hospital the tests were routine and were not compulsory. It seems clear that an attempt to diagnose syphilis is made much less frequently in rural than in urban communities and for mothers delivered at home as contrasted with those delivered in hospitals. Among a group of New Jersey mothers, 56 per cent had been examined and tested for syphilis (according to law) before the seventh month of pregnancy, while a comparative figure of 40 per cent was obtained in New York.

It would seem that much less argument can be brought to bear against antepartum than against premarital examination legislation. Moore, in a personal communication to me, expressed the belief that laws providing for antepartum examination are unnecessary, on the ground that serologic tests during pregnancy are routine in hospitals and in the practice of intelligent

3. Moore, J. E.: Am. J. Syph., Gonor. & Ven. Dis. **23**: 386 (May) 1939.

4. Nelson, N. A.: Am. J. Syph., Gonor. & Ven. Dis. **23**: 288 (May) 1939.

physicians. Accordingly the law would affect only the few women who are cared for by midwives and ignorant physicians. I cannot agree. In many states whose population is predominantly rural the great majority of women are delivered in their homes. For a large proportion of women so delivered serologic tests for syphilis are the exception rather than the rule. I can see no real argument against antepartum examination legislation except that of expense and wish to go on record as recommending its further adoption.

Until recently syphilis was the largest single cause of premature labor, stillbirth and fetal death. Twenty years ago at the Johns Hopkins Hospital 34.4 per cent of all stillbirths and neonatal deaths were due to this cause, and this figure did not include the large number of infants born alive with congenital syphilis and surviving the neonatal period. Even now 10 per cent of all such deaths at this hospital are due to syphilis, although most of these have occurred when the mother has not received antepartum care. At present congenital

Fig. 2.—Protecting babies from syphilis: Status of legislation requiring physicians to examine pregnant women, 1940. Nineteen states now have such laws. (From the American Social Hygiene Association, Oct. 1, 1940.)

syphilis must be considered as almost entirely preventable, provided routine serologic tests are obtained on all pregnant women and vigorous and adequate treatment is given all those with positive reactions.

Syphilis in pregnant women is usually latent, and only a small minority have a suggestive history or definite clinical signs. Diagnosis, then, must generally depend on serologic study, and a strongly positive reaction verified by repetition must be considered diagnostic. Despite opinion to the contrary, it seems definite that pregnancy does not cause false positive reactions but occasionally results in a false negative reaction. In the Johns Hopkins Hospital series there were 107 patients with false negative reactions, of whom 51 had received varying amounts of therapy and 56 previously had been untreated. It is generally felt that with a negative serologic reaction but with a history suggestive of syphilis, particularly if this includes one or more deliveries of premature or stillborn infants, treatment "on suspicion" is justified. If the husband has syphilis but the reaction of the wife's blood is negative, particularly if the pregnancy ensues soon after marriage, the blood test should be repeated at frequent intervals but no treatment given unless syphilis of the mother becomes proved. The chances of syphilis being passed on to the child are greatest if the disease is acquired shortly before, at the time of or soon after conception. If the infection occurs after the sixth month, the child will presumably be normal. Furthermore, the probability of transmission in utero diminishes as the number of years between infection and pregnancy increases. These last two statements do not mean that under the conditions stated treatment may be omitted with complete safety to the child.

Until recently it was generally believed that intensive antisyphilitic treatment was no more dangerous to the pregnant woman than to the nonpregnant woman. Minor reactions were disregarded, although a sharp watch was kept for possible hepatic or renal injury. A short time ago this theory was challenged and it was stated that reactions in general, and acute yellow atrophy of the liver in particular, occurred much more frequently after treatment during pregnancy than at any other time. It is probable that further study (preferably statistical) must be done before this question may be regarded as settled. It is, however, the opinion of the syphilis clinic at the Johns Hopkins Hospital that pregnancy itself bears no relation to the incidence and severity of therapeutic reactions.

The treatment of syphilis during pregnancy is primarily concerned with the unborn child, to prevent its becoming syphilitic if possible, and otherwise to treat an already existing infection. A brief outline of the routine proposed by Moore and placed in operation at the Johns Hopkins Hospital follows:

1. If the patient begins treatment before the fifth month, eight intravenous injections of arsphenamine (0.3 Gm.) or neoarsphenamine (0.6 to 0.75 Gm.) are given at weekly intervals, followed by four to six intramuscular injections of a bismuth compound (0.2 Gm.). This routine is repeated to the end of pregnancy.

2. If treatment is begun after the sixth month, the same schedule is used for arsphenamine, but six to eight injections of a bismuth compound are to be given on the same days on which the arsenical is administered.

3. If treatment is started after the eighth month, the foregoing schedule is followed, except that the interval between treatments is shortened to four or five days.

Treatment should never be relaxed, even though it has been started early in pregnancy. Furthermore, the routine should be arranged so that an arsenical is employed for the last three to four weeks prior to the estimated date of confinement. Obviously, therapy should be continued in the usual manner after the pregnancy is over. Finally, it is of the utmost importance that the child be examined carefully and watched closely. The examination should include a serologic test for syphilis on the cord blood, microscopic examination of the placenta, roentgenograms of the long bones, dark field examination of the vessels of the umbilical cord and pediatric clinical and serologic follow-up studies.

The results to be obtained from such a system of treatment are best illustrated by the accompanying table,

taken from a publication by McKelvey and Turner.[5] Obviously even a small amount of treatment increases the probability of a normal infant's being born. It seems evident that if thirteen to fourteen injections totaling about 4 Gm. of arsphenamine can be administered prior to delivery the danger of congenital syphilis may be eliminated. It is interesting to note from the study of McKelvey and Turner that of 167 babies born with congenital syphilis the mothers of 100 had received no antepartum therapy. Only 16 mothers had received 2 Gm. or more of arsphenamine or its equivalent, and most of these had been treated irregularly or had had a lapse of treatment during the last few weeks of pregnancy. Favorable results to the baby are enhanced if treatment of the mother has been instituted before pregnancy. However, even a large amount of such treatment does not render safe its omission during the gestational period, especially in the case of the primigravida. Combined treatment, including the administration of a heavy metal, gives better results than the use of arsenicals alone. Generally, if the treatment before pregnancy has not been adequate, if the serologic reaction remains positive or if there is clinical evidence

Outcome of Pregnancy with Varying Amounts of Antisyphilitic Treatment: No Treatment Prior to Pregnancy (Turner and McKelvey)

Treatment During Pregnancy	Number of Pregnancies	Condition of Child at Birth, Percentage		Ultimate Status of Child Known, Number of Children	Of These, Percentage	
		Living	Dead		Normal	Syphilitic
None	268	54.1	45.9	155	35.4	64.5
Arsphenamine						
Less than 1 Gm.	118	89.0	11.0	78	73.0	27.0
1-2 Gm.	127	90.6	9.4	94	79.7	20.2
2-3 Gm.	85	91.8	8.2	62	83.8	16.1
3-4 Gm.	33	100.0	0.0	24	87.5	12.5
4-6 Gm.	19	94.7	5.3	13	100.0	....
Total	650			426		

of infection, treatment during pregnancy is imperative. Completely adequate treatment, with repeatedly negative serologic reactions, probably protects the child completely even though therapy during pregnancy is not administered.

SUMMARY

The routine employment of serologic tests for syphilis by most hospitals and many physicians, together with the intensive treatment of all patients with positive reactions, has greatly diminished the incidence of antepartum transmission of the disease. Congenital syphilis will practically if not entirely disappear as soon as all pregnant women consult their physicians at a relatively early stage and the value of routine blood tests and treatment becomes universally understood.

ABSTRACT OF DISCUSSION

DR. CARL P. HUBER, Indianapolis: Dr. Peckham's paper presents an admirable summary of present opinion concerning premarital and antepartum serologic tests. In most states, legislation of this type has been so recently enacted that its effect is difficult of evaluation. In Indiana, premarital serologic tests have been required by law since March 1, 1940. During the first year, 66,326 tests were performed, with 1,125 positive reactions, an incidence of 1.69 per cent. The Indiana law corresponds to the "ideal law" suggested by the American Social Hygiene Association and, as in many other states, was adopted in great measure at the demand of the public. There has been no great difficulty in its administration. Sufficient time has not yet elapsed to make it possible to evaluate the effect of these tests. It seems pertinent, however, to point out additional values which they may have other than in direct case finding. Such laws are of potential educational value in venereal disease control. A law requiring, as these do, that the partners in a contemplated marriage consult a physician for examination also offers an opportunity for a phase of preventive medicine that is too frequently neglected by both the public and the medical profession. It is an ideal chance to perform a complete premarital examination and to give appropriate advice concerning the medical and sex hygiene problems of marriage and future pregnancy. It is one of the primary steps in any complete program of maternal welfare. Such an opportunity routinely followed up will increase many times the value of an already justifiable law. From March 1, 1940 to Feb. 28, 1941 a total of 31,691 serologic tests were reported on antepartum patients in Indiana by the state board of health and by the approved laboratories throughout the state. This represents slightly more than one half of the number of births which occurred during the same period. There were 520 positive tests, an incidence of 1.64 per cent, almost identical with the incidence in the premarital group. The Indiana law does not require that separate reports be filed on this group of patients, so that in many additional instances blood specimens were not listed as from antepartum patients. The state has looked on the antepartum law as primarily educational in nature. There is no penalty for not complying with it. Its value depends not only on the administration of adequate treatment in positive cases but also on the stage of pregnancy at which the blood is obtained for testing. From that point of view continued education concerning the value of early antepartum care is essential. The effectiveness of the law requiring an antepartum blood serologic test depends, then, on the caliber of antepartum care in any community. The value of this type of law would be increased if an effective means was established to insure adequate follow-up care and treatment for all infants born of mothers with a positive serologic test.

DR. HERMAN BEERMAN, Philadelphia: In a recent evaluation of premarital legislation, Sheppe found 1.3 per cent positive reactions among 677,832 examinations in thirteen states. A large percentage of such patients have latent syphilis, the diagnosis of which depends chiefly on the blood serologic reactions. These reactions are not infallible, especially in the woman. By the application of such a scheme of study for the doubtful case as proposed by Moore and his associates, one can largely eliminate much of the uncertainty in serologic diagnosis. This scheme, briefly, consists in careful physical examination for syphilis and other infections capable of producing a biologic false positive serologic test; a search for malarial parasites; examination of blood smears, and blood tests for infectious mononucleosis; determination of the sedimentation rate; repeated blood serologic tests by different technics in different laboratories and, if possible, by a quantitative procedure and by special antigens both specific and nonspecific; the performance of the as yet unverified "Kahn verification test"; serologic follow-up; family study, and a cerebrospinal fluid examination. Of course, a cerebrospinal fluid examination should be avoided in a pregnant woman. The provocative procedure is usually worthless, and treatment should be withheld until a definite diagnosis is established. There seems, as Dr. Peckham points out, to be little dispute as to the advisability of antepartum blood testing legislation. I wish not only to support his recommendation of it but to ask for at least two blood tests in pregnancy: one at the time of registration, to detect syphilis acquired anteconceptionally, and one later in pregnancy, about the seventh or eighth month, to uncover syphilis acquired by the pregnant woman during pregnancy. A young white primipara at the time of registration had a negative blood serologic reaction. About three months after registration she had an eruption, which was diagnosed by a dermatologist as a nonsyphilitic condition. No blood tests were made. The eruption persisted, and after delivery at another institution it

5. McKelvey, J. L., and Turner, T. B.: Syphilis and Pregnancy, J. A. M. A. **102**: 503 (Feb. 17) 1934.

was found that the offspring and the mother both had positive blood serologic reactions. On examination, the mother and the father both were discovered to have early infectious syphilis. I agree with the schedule for antepartum antisyphilitic therapy which Dr. Peckham proposes. If syphilis is discovered in the pregnant woman, the possibility of the child's becoming infected depends on several factors. Among these are the age of the infection in the mother, whether she is seropositive or seronegative, the amount and kind of therapy, and the time in pregnancy it is administered. Recent infections and seropositivity are generally less favorable. The more arsenical administered, and the earlier in pregnancy the treatment is begun, the more favorable the outcome with regard to the child. According to the best authority, it is recommended that every pregnant syphilitic woman be treated regardless of her disease and her serologic status, during every pregnancy. In regard to treatment reactions routine blood pressure and urine examination and common sense go a long way in making for safety in the treatment of the pregnant syphilitic woman. Our first year's experience in the Family Syphilis Clinic of the Pennsylvania Hospital, Philadelphia, organized to facilitate early and adequate treatment for pregnant syphilitic women, in which the obstetrician from the Lying-in Hospital and the syphilologist work hand in glove, illustrates the value of adequate antepartum antisyphilitic therapy in the prevention of congenital syphilis. These good results on a relatively small experience can be multiplied by close obstetric and syphilologic cooperation.

DR. CHARLES H. PECKHAM JR., Cooperstown, N. Y.: I should like to state that, whereas twenty years ago it was almost universally agreed that syphilis was the chief cause of premature delivery and stillbirth as well as one of the most common causes of fetal and neonatal mortality, there is a tendency at the present time to feel that the problem has been solved. Recently I have had the opportunity of looking up 1,000 consecutive fetal deaths that occurred in the obstetric service at the Johns Hopkins Hospital over a period of the last ten years. Even at this recent date 10 per cent of the total 1,000 deaths were due to syphilis.

CHEMOTHERAPY IN INFECTIONS OF THE BONES AND SOFT TISSUES

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In January 1941, at the ninth annual meeting of the American Academy of Orthopaedic Surgeons in New Orleans, a report was made describing the results obtained in the treatment of infections of bone by the systemic administration and the local implantation of sulfathiazole. Since the general principles on which this method was based were thoroughly covered in this preliminary report, this discussion is limited to the presentation of additional data on the use of sulfathiazole in the treatment of infections in bones and soft tissues, which data have accumulated since that time.

The plan of treatment for osteomyelitis advised in the preliminary report was as follows: first, systemic administration of sulfathiazole in sufficient dosage to secure a blood concentration of approximately 5 mg. per hundred cubic centimeters several days before operation, thorough débridement of the infected area, implantation of sulfathiazole crystals into the wound, primary closure and application of a plaster dressing for fixation. In the management of compound fractures, the same procedure was followed with one modification: in fresh compound fractures, since débridement cannot be delayed in order to secure a satisfactory blood concentration of the drug, sodium sulfathiazole was administered intravenously. In this way a fairly high blood concentration could be built up very rapidly. In old compound fractures, the preliminary treatment carried out was the same as that used in osteomyelitis.

In compound fractures, the local treatment was carried out as follows:

1. A tourniquet is applied to the extremity to be operated on and remains in place until the plaster dressing is applied for immobilization following the operative procedure.
2. The superficial tissues are thoroughly cleansed and washed with ether, and all foreign material is removed.
3. The cutaneous edges of the compound wound are excised for a distance of at least ¼ inch, all devitalized skin being removed.
4. The soft tissues are then thoroughly debrided, all traumatized and devitalized tissue being removed. This is the most important step of the entire procedure.
5. All detached bone fragments are removed.
6. The bone ends are brought into alinement and held by a bone clamp.
7. Internal fixation is applied, a silent metal such as vitallium being used.
8. The wound is cleansed with warm saline solution and thoroughly dried.
9. Sulfathiazole powder is now introduced into the wound. This is most effectively done by using a nasal insufflator, since in this way the powder is deposited in a thin layer over the bone and into the most minute crevices of the wound. Generally, from 1 to 3 Gm. of powdered sulfathiazole is sufficient.
10. The deep soft parts are sutured with interrupted catgut in such a manner as to bring them into as close contact as possible with the denuded area of bone. Following the suturing of the deep layer, additional sulfathiazole is introduced into the wound, and the superficial structures are closed with interrupted sutures. The skin is closed with cotton thread. A firm dressing is applied over the wound, and if there are any areas of denuded skin a thin layer of petrolatum gauze may be applied over these wounds. Finally, a plaster dressing is applied adequately to immobilize the extremity.

It should be clearly understood that the plan of local treatment described refers only to injuries in which the wound and the soft parts are of such character as to permit closure without tension and on patients who are to remain under the supervision of the surgeon. It could not properly be applied in war casualties in an action or movement, nor when there is extensive loss of soft parts. In this type of case, the wound should be left open and tamponed after the local introduction of sulfathiazole.

The first time that this procedure was used was Aug. 1, 1940, and since that time 56 patients have been treated by this method. This series is divided into subacute and chronic osteomyelitis (38 cases), compound fractures (16 cases) and miscellaneous infected wounds (2 cases). The latter group represents (1) an infected sinus in the thigh of about eight years' duration and (2) an infected ulcer of the foot. In both of these cases healing was by primary intention.

In the 56 cases reported, the age range was from 2 to 70 years. The average age was 24.6 years. The average total dose of sulfathiazole by mouth was 57.4 Gm. and the average daily dose was 5.3 Gm. The average blood concentration was 4.3 mg. per hundred cubic centimeters of blood. The average amount of the drug used locally was 1.9 Gm. The average healing time was twenty-one and six-tenths days.

Read before the joint meeting of the Section on Surgery, General and Abdominal, and the Section on Orthopedic Surgery at the Ninety-Second Annual Session of the American Medical Association, Cleveland, June 6, 1941.

The number of cases of chronic osteomyelitis was 38. Two unhealed cases were listed in the preliminary report—one an osteomyelitis of the femur of Escherichia coli origin, and the other an osteomyelitis of the mandible. The first of these cases, by the alternate use of the Carrel-Dakin method and sulfathiazole, healed in fifteen weeks and has remained healed. The patient with osteomyelitis of the jaw was reoperated on and a small piece of sequestrum was found and removed. Since then the wound has remained healed.

We wish at this time to report an additional case of osteomyelitis which failed to heal by primary intention. This case was one of osteomyelitis of the femur of thirty years' duration during which time numerous operations had been performed to clean up the condition. At the time it was operated on more than half of the circumference of the femur was removed for approximately two thirds of its length. Following the operation the Carrel-Dakin treatment was employed for two weeks, at the end of which time the wound was closed with introduction of sulfathiazole powder. The wound broke down in about two weeks and the Carrel-Dakin treatment was again administered for three weeks. At the end of this period, the Orr method of treatment was used. The cavity was, however, thoroughly insufflated with sulfathiazole powder before the petrolatum gauze was introduced and a cast applied. The Orr method was used at this time because economic conditions made it desirable for the patient to leave the hospital and return home. In this case healing is rapid and the result should eventually be successful but with a greatly prolonged healing time compared to the others.

The cases of compound fractures numbered 16. The age range of the patients was from 10 to 66 years, the average age being 36.9 years. The average total dose of sulfathiazole by mouth was 56.6 Gm. The mean average daily dose was 6.6 Gm. The average blood concentration was 4.7 mg. per hundred cubic centimeters of blood. The average amount of the drug used locally was approximately 2.6 Gm.

Of interest is the comparison of blood concentration with the use of the sodium sulfathiazole given intravenously to that of the sulfathiazole given by mouth. Six-hundredths Gm. of sodium sulfathiazole per kilogram of body weight was given intravenously, the average dose being 4.1 Gm. The average blood concentration after the lapse of five minutes was 47.5 mg. per hundred cubic centimeters, one hour 12.15 mg., two hours 10.75 mg., three hours 7 mg. and four hours 5.25 mg.

The mean average daily dose of sulfathiazole given by mouth was 6.6 Gm. The average blood concentration after the lapse of one hour was 4.2 mg. per hundred cubic centimeters, two hours 4.1 mg., three hours 5 mg., four hours 5.9 mg. and eight hours 4.7 mg.

The temperature, pulse, respiration and combining power of carbon dioxide were not materially affected by the one dose of sodium sulfathiazole that was given. Crystals of the drug were recovered in the urine at the end of one hour, but otherwise the urine was normal throughout the concentration period.

Eleven cases were of acute compound fractures and operation was performed within twenty-four hours. In 5 cases the compound fractures were old with persistent infection. The mean average healing time for this series was twenty-four and eight-tenths days. (Two cases of this series are of too recent occurrence to be reported, but both seem destined to satisfactory healing. Three other cases are to be reported later.)

CONCLUSIONS

In a series of 56 cases of infected bone and soft tissue the treatment employed was the administration of sulfathiazole by mouth or sodium sulfathiazole intravenously, thorough débridement of the focus and the introduction of sulfathiazole powder into the wound. In 53 cases healing was by primary intention with an average healing period of twenty-one and six-tenths days. Two cases should be termed successful but with a greatly prolonged healing time as compared to the others. One case we consider a failure as regards this method, but the case is still under treatment.

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ABSTRACT OF DISCUSSION

DR. FRANCIS M. MCKEEVER, Los Angeles: I am not qualified by large experience with chemotherapy in fractures to discuss this paper. In my series of compound fractures there were 77 patients. The small puncture compound fractures were not a great problem. Most of them healed primarily. It had been my impression that a good débridement gave a high percentage of good results. However, in the large lacerated wounds the percentage of primary healing was not high. It was a disappointment. A small group was treated by local chemotherapy and by closing the wound, and, although this group is very small, it is suggested that the method is effective and that the sulfanilamide drug should be used locally as well as systemically. As far as the method of treating old osteomyelitis by dissecting out the sinuses and filling the wound with sulfathiazole is concerned, I have tried it in only 5 cases. I must say that despite my skepticism it has worked in 5 instances consistently. I should like to ask the authors what attitude they take toward the puncture wound fracture. Do they feel that it is worth while to open this wound widely so that the chemical can be disseminated throughout the injured tissue? I should also like to ask whether in their longer follow-up of the cases of chronic osteomyelitis some of the wounds which were healed early have later on formed abscesses and drained.

DR. ROBERT W. JOHNSON JR., Baltimore: It would seem that we have a problem here of two types of injury, severe soft part injury with fracture, the severe compound fracture, and the puncture wound fracture. I think we are pretty well convinced that the puncture wound fracture had dynamite in it, potentially but not surely, whereas the severe compound fracture is a tremendous problem for us all the time. I was struck by an omission on my part to use the intravenous drug in these cases. I think that is a definite protection which should be offered to the patient, of which the authors have made good use. The one point on which I find myself in disagreement with Drs. Diveley and Harrington is that in a compound fracture seen early the most dangerous organisms which are potential invaders are the gas bacillus group and the streptococci. Now sulfanilamide is very much more potent with those than sulfathiazole. I like to use sulfathiazole only when there is pretty good evidence that the staphylococci are the infecting organisms. I believe that it would be wiser to use sulfanilamide in the first thirty-six to forty-eight hours and then switch to staphylococcus specific and use the sulfathiazole group later. Certainly, in the case which they showed us in the movie which was ninety-six hours old the drug of choice would be sulfathiazole, because it was evident that there was not a gas infection and probably not a streptococcic infection in a wound that looked like that. The main point, however, is that here we have a series of drugs which have tremendous potentiality to help us. We must learn how to use them. We must learn how to couple them with surgical procedures. We are faced with the problem of the individual compound fracture in which the degree of bone damage, circulation, soft tissues, the duration of time since the accident occurred and the character of the ground introduce, one might say, a hundred different variables, and the point that I should like to end on is that, while we have powerful aids now which we have not had in the past, there is still no substitute for surgical judgment.

DR. REX L. DIVELEY, Kansas City, Mo.: There are many points that we hope to prove in the future. As Dr. Johnson has said, possibly sulfanilamide can be used more effectively as far as the prophylaxis against the streptococcus and gas bacillus are concerned. Dr. McKeever has mentioned puncture wounds. Small puncture wounds without a great deal of traumatism to the soft tissues I do not believe need to be disturbed. We, of course, sterilize the nozzle of the insufflator, and this can be introduced into the wound and powder can be thoroughly instilled into the wound without an extensive débridement. He mentioned abscesses which might appear later. Unquestionably we are going to have some kickbacks from this procedure. While our results are seemingly excellent at the moment in our particular series, the method is less than a year old. We shall know a lot more at the end of a few more years.

HEPARIN IN SUBACUTE BACTERIAL ENDOCARDITIS

REPORT OF CASES AND CRITICAL REVIEW OF LITERATURE

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CASE 1.—*History.*—Ann Arnholt, aged 19, an Ohio State University student, was admitted to the White Cross Hospital, Columbus, March 5, 1940. In October 1939 the present illness began with acute inflammation of the upper respiratory tract, fever, anemia, cessation of the menses, swollen joints and a mitral systolic murmur at the apex. The clinical diagnosis was acute vegetative endocarditis. Blood cultures were negative until November 16, at which time a long chain nonhemolytic streptococcus was obtained. Administration of sulfapyridine was discontinued owing to severe vomiting. In December and again in February 1940 she had a cerebral accident which on the first occasion partially paralyzed her right arm and on the second occasion the left arm and left side of the face. In March vision was blurred, acuity of hearing failed and headaches and urinary frequency developed. Repeated cultures through March 12 were reported as a short chain streptococcus. During the period from the onset, October 1939, to admission, March 5, 1940, she had lost 65 pounds (29.5 Kg.). On admission she was greatly dehydrated, weak, partially paralyzed in both arms and one leg, suffered headaches and was very nervous and fretful. The patient was brought to us because her parents had read of the treatment of bacterial endocarditis with heparin. The dangers of the treatment were carefully explained to the parents.

Clinical Course in Hospital.—The duration from admission to death was twenty-seven hospital days—March 5 to March 31 inclusive. During the first seven days measures were carried out to combat her general poor condition. Heparin was administered during the next fifteen days and no heparin was given the last five days. Sulfapyridine was given daily from the second to the twenty-fifth day in amounts shown on the chart (fig. 1); also charted are the fluid intake and urinary output. Sulfapyridine caused nausea and vomiting throughout. After the priming dose, heparin was administered through a needle inserted in the saphena magna vein at the ankle; however, heparin was discontinued for three days from March 19 to March 22 because the needle assumed a position which impeded intake of the heparin and saline solution and to give the patient a rest from continuous drip therapy. The needle was then inserted in the vein of the other ankle.

The coagulation time was determined daily (method of Lee and White) at the same hour by the same technician. The normal coagulation time was four and five minutes on admission. Under heparin treatment the tests were reported as but six and one-half to seven and one-half minutes.

Mentally she improved considerably after the heparin administration was begun, and she maintained this apparent improvement until after the cessation of heparin treatment. In spite of the nausea caused by the sulfonamide drug, she ate and slept better, and the nurses who were with her twenty-four hours a day reported that she used her partially paralyzed limbs better than before. The heparin was stopped two or three days earlier than had been anticipated, owing to the sharp decrease in the urinary output, which occurred on the twenty-fourth hospital day (fig. 1). This was coincident with moderate generalized edema.

On the twenty-sixth hospital day—three full days after the cessation of heparin and the day before death—the patient seemed considerably improved, moved her left arm and leg and talked about going home. The morning of the twenty-seventh day severe edema of the face, hands and ankles developed. Her nails were cyanotic, respirations were shallow and labored, the pulse was weaker and the heart had a gallop rhythm. Oxygen was administered, but the patient lapsed into coma and died during the evening of the twenty-seventh day.

Dr. R. S. Fidler of the White Cross Hospital made the postmortem examination, which we witnessed. It revealed no thrombus either proximal or distal to the insertion of the needles used for heparin administration. The spleen was twice the normal size, contained numerous infarcts, old and recent, the largest of which were 2 cm. in diameter. The stomach and first part of the duodenum showed mucosal hemorrhages. Numerous old kidney infarcts were present, the largest 1 cm. in diameter, with no recent kidney infarcts. The abdominal and thoracic cavities and pericardium contained a large amount of straw colored fluid. The heart showed destruction of the aortic valve, as shown in figure 2. The arachnoid was found distended with a brownish fluid. There was brownish discoloration over the left parieto-occipital area, and an old hemorrhagic area at the middle portion of the right cerebral artery. The ventricles showed no pathologic changes, and no recently infarcted areas or emboli could be found. Microscopic sections showed the aortic cusp and the surface of the valve covered with a fibrinous thrombus beneath which there was some proliferation of endothelial cells. Within this superficial thrombus were colonies of bacteria. Beneath the endothelial layer was a productive fibrosis with a moderate infiltration of pus cells and lymphocytes. The blood vessels of the duodenum were engorged with blood but were not thrombotic. The final diagnosis was:

1. Acute and subacute vegetative bacterial endocarditis of the aortic valve invading the mitral valve.
2. Acute and subacute myocarditis.
3. Embolic infarcts of the middle cerebral artery, kidneys and spleen.
4. Subarachnoid edema with old hemorrhage.
5. Superficial mucosal hemorrhagic degeneration of the gastrointestinal tract.
6. Generalized edema of the subcutaneous tissues, ascites and pleural and pericardial effusion.
7. Infantile uterus with fibrosis and follicular cysts of the ovaries.

CASE 2.[1]—*History.*—L. T., a woman aged 37, had onset of symptoms three months before her hospital admission, Nov. 2, 1939. Repeated blood cultures were positive for Streptococcus viridans. She was treated with sulfapyridine, which rendered the blood negative for a while.

Course in Hospital.—During her first twelve hospital days the temperature curve showed daily rises to 102 and 103 F., and she complained of occasional attacks of pain in her left shoulder. Two days later she received 500 cc. of whole citrated blood. On the nineteenth hospital day a continuous intravenous drip of 30,000 units of heparin in 1,500 cc. of physiologic solution of sodium chloride was started with the chemotherapy. During this procedure her temperature curve demonstrated a daily fluctuation (99 to 100 F.). In a few days she became

1. Dr. S. A. Hatfield gave the authors permission to report this case, which was under his care at the Ohio State University Hospital.

severely nauseated and demonstrated some edema of the ankles and of the right hand and arm. By the seventh day of heparin treatment her clotting time had increased to one hour and fifteen minutes. She complained of severe headaches and vomiting. Heparin therapy was discontinued and her temperature rose to 103 F. and she began voiding and defecating involuntarily. Her extremities became cold and she would not respond to any stimuli. Blood pressure rose to 178 systolic and 100 diastolic and caffeine and sodium benzoate were given; also daily clysis of 1,000 cc. of 5 per cent dextrose in physiologic solution of sodium chloride was administered. On the sixth day of coma she regained partial ability to speak, but a slight twitching of the left side of her face and of her left arm was noted. Speech gradually improved. During the course of the next month her temperature ranged between 100 and 103 F. She complained frequently of severe pain in her head, abdomen, shoulder, legs and arms. Culture of her blood became positive and her spleen palpable. On the eighty-first hospital day she complained of the sudden onset of a red and painful area over the dorsum of her left foot. Twenty days later she had severe headache and a painful abdomen and again she voided involuntarily. On the following day spasmodic twitching of her left arm and an occasional attack of a convulsive seizure occurred. The temperature rose to 105 F. and her pulse became rapid and weak. Respirations were shallow and irregular. She exhibited extreme peripheral cyanosis, dyspnea and coldness. She died on her one hundred and first hospital day with the diagnosis of subacute bacterial endocarditis.

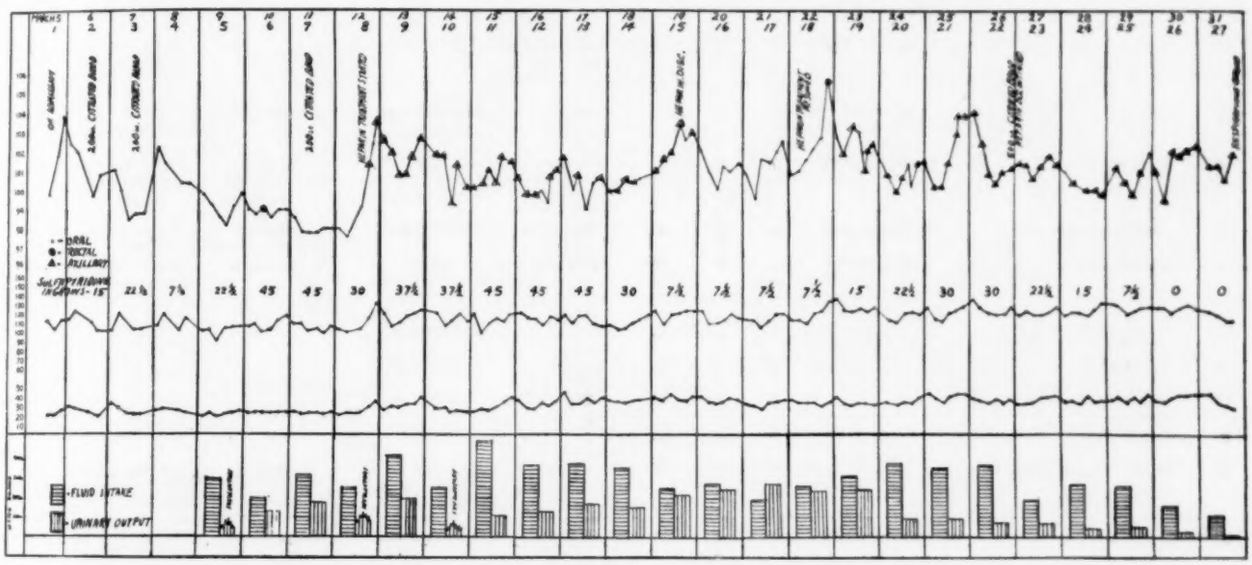

Fig. 1 (case 1).—Clinical observations from March 5 to March 31.

Dr. Emmerich von Haam made the autopsy report. This patient also had multiple infarcts of the spleen and kidneys and likewise involution of the ovaries and uterus, as well as old cerebral hemorrhage. In addition to the pathologic picture of valve damage, she showed recent meningeal hemorrhage as the cause of death.

CRITICAL REVIEW

We see no value in a computation of the percentage of improvements in this series. Certain cases would have to be deleted for various obvious reasons. The incidence of subarachnoid and cerebral hemorrhage is alarming. There is no reason to believe that other cases known to have been under treatment by this method, but which have not been reported in the literature, fared better. Friedman,[2] who with Hamburger and Katz,[3] first proposed the physiologically attractive theory of the use of heparin for this condition, states that he now believes it to be of no value. And Fletcher, after an experience with one case [4] and a second case a year later,[5] states that the use of heparin should be discontinued; finally Blumer [6] writes that the method as used should be abandoned. However, improvement in cases reported by Kelson and White,[7] as well as several cases reported by various authors which apparently showed improvement clinically while under treatment, has given some authors hope that further trial might be justifiable, and this view has been editorially supported wholely or in part.[8]

If Friedman, Hamburger and Katz's original theory is to be experimentally tested, we doubt whether the plan of heparin treatment used by them and followed by subsequent workers constitutes an adequate test of the theory. We doubt whether the entire plan of subjecting the patient to the effects of heparin, sulfapyridine and a large quantity of fluid simultaneously—all within two weeks—is judicious.

We recognize the amount of heparin given and the duration of administration as the same which are used for the prevention of postoperative thrombosis. Crafoord [9] has shown that in the same patients a greater heparin dosage is needed after operation to produce a given prolonged coagulation time than before operation; and Rojak [10] in a series of 67 operative and nonoperative cases has shown that in postoperative conditions additional heparin is required to attain a given

2. Friedman, Meyer: Use of Sulfanilamide and Sulfapyridine in Therapy of Subacute Bacterial Endocarditis, Arch. Int. Med. **67:** 921-938 (May) 1941.

3. Friedman, Meyer; Hamburger, W. W., and Katz, L. N.: Use of Heparin in Subacute Bacterial Endocarditis, J. A. M. A. **113:** 1702-1703 (Nov. 4) 1939.

4. Fletcher, C. M.: Subacute Bacterial Endocarditis Treated with Sulfapyridine and Heparin, Lancet **2:** 512-514 (Oct. 26) 1940.

5. Fletcher, C. M.: Failure of Heparin in Subacute Bacterial Endocarditis, Lancet **1:** 444-445 (April 5) 1941.

6. Blumer, George: Remarks on Subacute Bacterial Endocarditis, with Special Reference to Its Recognition and the Present Status of Treatment, West. J. Surg. **49:** 406-416 (July) 1941.

7. Kelson, S. R., and White, P. D.: A New Method of Treatment of Subacute Bacterial Endocarditis, J. A. M. A. **113:** 1700-1702 (Nov. 4) 1939.

8. Chemotherapy in Subacute Bacterial Endocarditis, editorial, J. A. M. A. **116:** 1646 (April 12) 1941. Treatment of Bacterial Endocarditis, editorial, Lancet **2:** 525 (Oct. 26) 1940.

9. Crafoord, Clarence: Acta chir. Scandinav. **79:** 407, 1937.

10. Rojak, S.: Wirkungsdauer von intravenos injiziertem Heparin beim Menschen, doctor's thesis, Chirurgischen Klinik der Universität Bern, 1939.

Summary of Series of Sixty-Seven Cases of Subacute

No.	Author	Treated	Cases	Sex	Age	Duration of Disease	Blood Cultures	Heparin Used	Concentration
1	Friedman, Hamburger and Katz	March 1938	1	♂	..	Old	Str. viridans	Connaught	30 cc. per liter 30,000 units per liter
2	Kelson and White.....	April 1939	1	♂	21	.....	Str. viridans	Connaught	10 cc. vial to 500 cc. saline
3	Kelson and White.....	April 1939	2	♂	22	2½ weeks	Str. viridans	Connaught	10 cc. vial to 500 cc. saline
4	Kelson and White.....	April 1939	3	♀	23	6 months	Str. viridans	Connaught	10 cc. vial to 500 cc. saline
5	Kelson and White.....	June 1939	4	♀	19	3 weeks	Str. viridans	Connaught	10 cc. vial to 500 cc. saline
6	Kelson and White.....	July 1939	5	♂	41	7 weeks	Str. viridans	Connaught	10 cc. vial to 500 cc. saline
7	Kelson and White.....	July 1939	6	♂	25	1 week	Str. viridans	Connaught	10 cc. vial to 500 cc. saline
8	Kelson and White.....	July 1939	7	♂	41	7 months	Str. viridans	Connaught	10 cc. vial to 500 cc. saline
9	Witts, L. J.....	February 1940	1	♀	..	Advanced state	.....	Roche	15 mg. an hour; 360 mg. to liter; normal saline daily
10	Weeks, DeForrest.....	December 1939	1	♀	33	3 months ±	Positive?	.....	10 cc. vial to 500 cc. saline
11	Miller, E. R.....	April 1940	1	♀	11	1 year?	Str. viridans 100 per cc.	Connaught	10 cc. to 500 cc. saline (10,000 units)
12	Fletcher, C. M.....	December 1939	1	♂	..	6 weeks	150 colonies per cc. Str. viridans	A-B-C (see original)	12,500 to 15,000 units per 500 cc.
13	Fletcher, C. M.....	December 1940	2	♀	40	3 months	Str. viridans	Liquemin (heparin) Roche	1 mg. powder per cc. saline
14	Kleiber, E. E.....	January 1940	1	♀	19	1 month	30-200 colonies per cc.	Connaught	10 cc. per 500 cc. saline
15	Petch, C. P.....	.....	1	..	..	.....	Positive	.....	.....
16	Petch, C. P.....	.....	2	..	..	.....	Positive	.....	.....
17	Petch, C. P.....	.....	3	..	..	.....	Positive	.....	.....
18	Petch, C. P.....	.....	4	..	..	.....	Positive	.....	.....
19	Dockeray and Kawerau.....	.....	1	♀	19	Old	220 colonies per cc. Str. viridans	Liquemin (heparin) Roche	350 mg. powder to 1 liter of sodium dextrose
20	Doane, J. C.....	February 1940	1	♂	46	6 months	Str. viridans	Connaught	10 cc. vial (10,000 units) 500 cc. saline
21	Doane, J. C.....	February 1940	2	♀	31	4 weeks	40 per field Str. viridans	Connaught	10 cc. vial (10,000 units) 500 cc. saline
22	Doane, J. C.....	February 1940	3	♀	13	20 days	Str. viridans	Connaught	10 cc. vial (10,000 units) 500 cc. saline
23	Sevitt, S.....	July 1940	1	♂	28	3 weeks	.....	Liquemin (heparin) Roche	Saline
24	Sevitt, S.....	June 1940	2	♂	..	3 months	.....	Roche	4-16 mg. per hour in 1 liter daily
25	Friedman, M.....	.....	1	..	60	2½ months	Str. viridans	.....	.....
26	Friedman, M.....	.....	2	..	7½	2 months	Str. viridans	.....	.....
27	Friedman, M.....	.....	3	..	34	1½ months	Str. viridans	.....	.....
28	Druckman, J. S.....	December 1940	1	♀	31	.....	Str. viridans	.....	20 cc. per liter of distilled water
29	McLean, Meyer and Griffith	March 1940	1	♀	19	.....	Long chain Str. viridans	Connaught	20 cc. to 10,000 cc. saline
30	Personal communication... Case of Dr. S. A. Hatfield (Ohio State Univ. Hosp.)	December 1939	1	♀	37	3 months	Str. viridans	Connaught	30,000 units per 1,500 cc. saline
50	Kelson and White.....	.....	20 cases	..	..	.....	.....	.....	.....
54	Deitrick.....	.....	4 cases	..	..	.....	.....	.....	.....
67	Lichtman and Bierman.....	.....	13 sases	..	..	.....	.....	.....	.....

Jones, C. O.—Case apparently not treated with heparin

* Personal communication.

Bacterial Endocarditis Treated with Heparin

Rate, Drops per Minute	Total Heparin	Priming	Clotting Time	Duration of Heparin Treatment	Complications	Results	Autopsy	Cause of Death
.....	.....	.....	5 × normal (30 min.)	10 days	Nephritis; projectile vomiting	Died on 10th day of treatment	Yes	Cerebral hemorrhage
15-25	.....	.....	About 1 hour	3 days	Severe recurrent pulmonary infarction	Died two weeks after treatment		
15-25	260 cc.	.....	About 1 hour	14 days	Concurrent rheumatic fever	Well 19 weeks; died Oct. 12, 1939	Yes; healed lesions	Congestive failure but healed endocarditis
15-25	290 cc.	.....	About 1 hour	14 hours		Well 18 weeks		
15-25	.....	.....	About 1 hour	40 hours +	Headache, vertigo, amblyopia	Chills and fever, died	Yes	Large occipital and subdural hematomas
15-25	.....	.....	About 1 hour	1½ hours	Chills, high fever, collapse (heparin toxicity)	Died 17 hours after heparin therapy	Yes; typical lesions	Heparin toxicity?
15-25	.....	.....	About 1 hour	1½ hours	Chills and fever (heparin toxiciyt)	No change		
15-25	185 cc. +	.....	About 1 hour	1 hour + 7½ days	Chills and fever (heparin toxicity)	No evidence of disease 4 weeks after treatment		
.....	.....	.....	About 1 hour	7 days	Renal hemorrhage; heparin discontinued for 12 days on 3d day	Grew worse under treatment; died on 7th day of treatment	Yes; usual features of endocarditis	Subarachnoid hemorrhage
20	.....	.....	12½ to 45 min.	11 days 1st course; 2d summer of 1940 *	No hemorrhages, September 1940 to September 1941	Improved; living; still in bed with temperature 99.2		
15-25	401,800 units 20,000 cc. 2% solution	.....	4 min. to 4 hrs. 25 min.	10 days	Hematemesis and bleeding from gums on 4th day	Died suddenly on 10th day of treatment	Yes, involved valve; Str. viridans in blood	Cerebral hemorrhage
20,000 units in 24 hours; 20-40	.....	.....	.....	4 days plus 4 days more	Venous thrombosis; heparin of varied strength; headache; nausea	Died on 4th day of second course	Yes	Cerebral hemorrhage
1 liter daily	130.8 mg. in 12 days	.....	8¼ to 77 min.	12 days	Headache; vision defect	Died 6 hours after heparin stopped	Yes; vegetations not affected	Cerebral hemorrhage
.....	90 cc. 900,000 units	.....	.....	Estimated 4 to 5 days	Gross hematuria toxic to heparin	Cerebral hemorrhage about 6 days after heparin; died 6 months later	Yes; some evidence of healing lesions	Right hemiplegia
.....	.....	.....	.....	.....	Variation in heparin strength	Well for 6 months		
.....	.....	.....	.....	.....	Variation in heparin strength	Died	.....	Intracranial hemorrhage
.....	.....	.....	.....	.....	Variation in heparin strength	Died	.....	Intracranial hemorrhage
.....	.....	.....	.....	.....	Variation in heparin strength	Died	.....	Toxic jaundice
(Also rotary pump) 15-18	1,867 mg. or 5,335 cc. of solution used	40 mg. in 5 cc.	70 to 130 min.	8 days	None; improvement striking	Lived 3 months after treatment	Yes, endocarditis; kidney infarcts	Disease
15-35	.....	.....	5 times normal	8 days	On 7th day of heparin, nystagmus; unconscious on 8th day	Dead on 8th day	Yes, liver and spleen infarcts	Cerebral hemorrhage
15-35	28 vials 280,000 units	.....	5 times normal	14 days		Alive and undertaking second course of heparin, 300,000 units plus		
15-35	.....	.....	5 times normal	14 days		Well; discharged from hospital April 1, 1941		
16; 42 cc. per hour 1½ liter daily	.....	.....	15-20 mg. heparin more than trebled clotting time	2 or 3 days	Pulmonary embolism	Dead on 3d day	Yes	Embolus, right pulmonary artery
16; 42 cc. per hour 1½ liter daily	.....	.....	10 min. to 5 hours	72 to 80 hours	Air hunger; coma	Died during treatment	Yes, splenic infarcts; brain softening; no hemorrhage	Cerebral embolus
.....	3-4 vials daily for 35 days	.....	15-35 min.	35 days		Dead	Yes	
.....	3-4 vials daily for 21 days	.....	15-35 min.	21 days	Thrombosis in vein used to administer heparin	Dead		
.....	3-4 vials daily for 14 days	.....	15-35 min.	14 days		Dead	Yes	
.....	.....	.....	Varied from 15-238 min.	10 days +	Heparin (toxicity?)	Well		
20-40	340,000 units	Yes; 10,000 units	4 to 7½ min.	12 days	Edema; cerebral embolus	Dead	Yes	Disease
.....	.....	.....	3 to 75 min.	7 days	Cerebral hemorrhage; edema-coma-paralysis; edema; treatment discontinued on 7th day	Died in hospital on 101st day about 2 months after therapy	Yes	Disease
.....	.....	.....	.....	.....	.....	2 cases improved; 18 cases not improved		
.....	.....	.....	.....	.....	.....	No recoveries		
.....	.....	.....	.....	.....	.....	1 recovered; 12 did not recover		

prolongation of the coagulation time. The amount of heparin used in treating postoperative thrombosis is based not only on the necessity of maintaining the blood at a higher incoagulable level but also on the necessity of neutralizing the thromboplastic substance (cephalin) which is freed in the course of an operation. The neutralizing action of cephalin and heparin on each other almost prevented the discovery of this anticoagulant.[11] This free cephalin does not exist as such in bacterial endocarditis, and therefore an amount of heparin to neutralize it is not required.

Further, the overdosage of heparin may be just the additional amount required to cause untoward complications such as those reported by Kleiber [12] and Witts,[13] namely more or less renal hemorrhage. This may occur even in massive quantity, as was reported recently.[14]

While an extremely prolonged coagulation time of one to five hours, which has been produced by this amount of heparin, may not in itself be dangerous, apparently the effects of the extreme fluidity of the blood produced by this dosage has been overlooked.

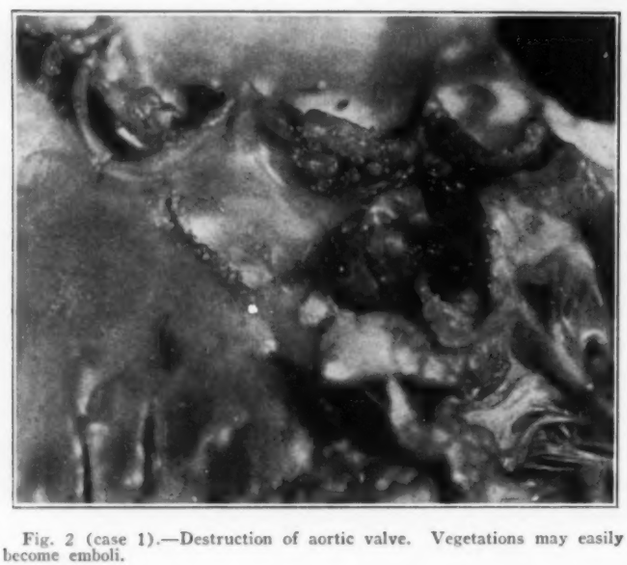

Fig. 2 (case 1).—Destruction of aortic valve. Vegetations may easily become emboli.

In a patient who may have vegetations suspended by a fibrin thread in a heart whipped to feverish activity, this excessive fluidity may cause emboli by the mechanical factors present and produced. Even the earliest (1916) preparations of cuorin and heparphosphatid [15] produced such fluidity. Since emboli developed in so many cases while under treatment or shortly thereafter, the amount of heparin used and the fluidity of the blood occasioned by it appear to be the probable precipitating causes. A dosage based in part on body weight should be considered.

The duration—two weeks—has proved adequate to prevent postoperative thrombosis, but we doubt whether the healing required in the vegetations could be accomplished within this period; on the other hand, heparin given by continuous intravenous drip could not be tolerated longer by these very sick patients.

It is questionable whether the amount of fluid administered as heparin solvent is not immoderate in a patient with a badly damaged heart, and possibly, if not probably, with diminished kidney function due to preexisting infarcts. The amount of fluid used and the concentration of the heparin are essentially the same as those used in prevention of postoperative thrombosis; however, in these cases the heart is presumably normal and the fluid itself has a definite value. Added to this is the fact that continuous intravenous injections by the drip method are extremely difficult to regulate for uniform delivery of either the medium or the solvent.[16] However, an efficient control of such a slow and prolonged procedure was obtained by the use of the rotary pump.[17] Certainly if the intraveous drip method is to be used the fluid intake and the urinary output should be carefully charted.

In Sweden very good results have been obtained by single intravenous injections of heparin every six hours, although Rojak's work would indicate that a more uniform incoagulability of the blood could be maintained by injections every four hours. This would obviate the necessity of administering so much fluid and probably be adequate for the purpose to be accomplished in treating bacterial endocarditis. It would also eliminate much nursing expense. Murphy, Correll and Grill [18] have recently pointed out the dangers of intravenous solutions. The single injection method, however, has the disadvantage of rapid elimination of heparin from the blood stream. If the continuous injection method is to be continued, the pump should be used and the amount of heparin and fluid reduced.

The question of the simultaneous use of heparin and a sulfonamide drug also arises; for the vomiting which is a frequent untoward effect of sulfapyridine may cause a further strain on the heart and thus contribute to the mechanical effects causing emboli. Some work has been done by N. A. David and his associates [19] to reduce the various untoward effects of the drug. Swain's [20] recommendations for in vitro tests of the organism's susceptibility to the sulfonamide drug should be carried out if its use is to be continued. However, if Friedman, Hamburger and Katz's original theory is to be tested, we believe that, since the blood is known to possess a high titer of antibodies for the organisms and since the main problem is not the sterilization of the blood stream, heparin should be allowed to act alone in preventing further valve deposits and permitting old ones to heal. This should be tested without complicating the picture by the simultaneous use of sulfapyridine. The fluidity of the blood caused by heparin, even in moderate dosage, may increase the amount of antibodies present in the relatively avascular valves.

Selection of cases in this series does not seem to have taken place. Apparently the cases were accepted as they became available. A summary of 67 cases is

11. McLean, Jay: The Thromboplastic Action of Cephalin, Am. J. Physiol. **41:** 250-257 (Aug.) 1916.
12. Kleiber, Estelle E.: Subacute Bacterial Endocarditis Treated Unsuccessfully with Sulfapyridine and Heparin, J. A. M. A. **115:** 1713-1714 (Nov. 16) 1940.
13. Witts, L. J.: Heparin in Subacute Bacterial Endocarditis, Brit. M. J. **1:** 484 (March 23) 1940.
14. Ershler, I. L., and Blaisdell, I. H.: Massive Hematuria Following Use of Heparin in Cavernous Sinus Thrombosis, J. A. M. A. **117:** 927-930 (Sept. 13) 1941.
15. Cuorin and heparphosphatid were renamed antiprothrombin (Howell, W. H.: The Coagulation of Blood: Harvey Lecture 1916-1917 Series, 273-324, April 7, 1917) and antiprothrombin was renamed heparin (Howell, W. H., and Holt, E.: Two New Factors in Blood Coagulation, Heparin and Proantithrombin, Am. J. Physiol. **47:** 328-341 [Dec.] 1918).
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given in the accompanying table.[21] While it is difficult to determine just what is an old or a recent subacute bacterial endocarditis (the basis of a damaged heart may have originated in childhood), still we believe that a patient such as ours who was almost moribund on admission is not suitable for the treatment unless the plan of treatment in the future is radically altered.

CONCLUSIONS

1. The results secured in this series of 67 cases do not warrant further trial of the treatment by heparin according to the plan used.

2. If heparin treatment is to be continued, we believe that the various factors which must be considered before treatment is given, as well as be controlled during treatment, will require the cooperation and facilities afforded by a group of scientists working in an institute for medical research which could admit an adequate number of selected cases for a suitable duration.

247 East State Street.

HIGH VOLTAGE ROENTGEN TREATMENT OF ELUSIVE ULCER OF THE BLADDER

A REPORT OF A CLINICAL STUDY OF TWENTY-FIVE CASES

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AND
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This paper is based on a clinical study of 25 patients given high voltage roentgen therapy in whom the diagnosis of elusive ulcer was made. The various forms of treatment that have been advised and employed, from wide resection of the ulcer-bearing area to fulguration, are legend and it is not necessary to review them at this time. Suffice it to say that when the treatment of elusive ulcer is discussed and all the various forms of treatment are mentioned, the use of roentgen rays is mentioned as casually as are some of the other forms of treatment. So far as we know, a study of a group of similar cases treated with high voltage roentgen therapy has not been reported.

Because of the paucity of reports of the results of treating elusive ulcer with high voltage roentgen rays, and because of the present trend to treat inflammatory conditions elsewhere in the body with roentgen rays, it occurred to us to treat a series of patients to determine whether or not roentgen therapy is of any value in elusive ulcer.

The 25 patients were studied in two separate groups: The first group, consisting of 10 women, were studied in 1932 and 1933, and the second group, consisting of 12 women and 3 men, were treated in 1938 and 1939.

In order to avoid producing an artificial menopause with its distressing symptoms, the women selected had all reached the menopause. The first group of patients received fulguration and water dilation along with roentgen therapy. The specific factors used were as follows: Four fields, 15 by 15 cm., two anterior and two posterior, were treated daily with 140 kilovolts, 5 milliamperes, 25 cm. target skin distance, 0.25 mm. of copper and 1 mm. of aluminum filter, one area being given 200 roentgens daily, with a total dose of 600 roentgens to each area with each course of treatment. The total dose to the pelvis was 2,400 roentgens. This course was repeated two to four times at six week intervals, depending on the patient's local and systemic reactions.

All the patients had an increase in their bladder symptoms during the course of treatment which persisted for about two weeks. Following this there was some temporary improvement in about 50 per cent of the patients, and 2 patients were definitely improved. The remaining 8 patients had no permanent improvement.

Because of the improvement noted in these 2 cases it was decided to study a second group of cases in which roentgen therapy only was used after other forms of treatment had failed. The specific factors used in this group were as follows: Two fields of 15 cm., one anterior and one posterior. The following physical factors were used: 200 kilovolts, 10 milliamperes, 0.5 mm. of copper, 1 mm. of aluminum filter and 50 cm. target skin distance, delivering 200 roentgens daily to alternate portals; 600 roentgens was given to each area in each course of treatment. The total dose to the pelvis was 1,200 roentgens. Two or three courses of treatments were given to these patients at six week intervals.

During the course of treatment these patients experienced a definite increase in their bladder symptoms which continued for about two weeks after treatment. Again some temporary relief was noted in half of the patients. Follow-up cystoscopies and clinical observations failed to disclose a single case of permanent relief by roentgen therapy.

This group of cases was closely followed by repeated cystoscopies, and while here and there there seemed to be an activation of the process for the time being, in that there appeared to be a little more redness in the ulcer-bearing area at the end of the treatment, whatever local reaction may have occurred soon disappeared and so far as one could tell from cystoscopy there was no change in the character of the ulcer-bearing area. In no case was the patient any worse after the treatment than before.

SUMMARY

Roentgen therapy as we administered it in this group of cases failed to effect a permanent cure in a single case. During the treatment there was an acute exacerbation of the bladder symptoms, which disappeared, followed by some relief of the symptoms. This relief was transitory in all cases. Our experience, therefore, in treating a well selected group of elusive ulcers which were not benefited by previous treatment and in which only roentgen therapy was given verifies the general impression that high voltage roentgen therapy is of little value in the treatment of elusive ulcer.

122 South Michigan Avenue.

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From the Presbyterian Hospital of Chicago.
Read before the Chicago Urological Society, Nov. 28, 1940.

Clinical Notes, Suggestions and New Instruments

HODGKIN'S DISEASE OF THE HEART AND PERICARDIUM

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Murchison[1] was the first to describe involvement of the heart in Hodgkin's disease. The condition is rare, as indicated by recent reviews of the literature.[2]

This communication reports a case of Hodgkin's disease in which the appearance of symptoms of myocardial insufficiency led to a clinical diagnosis of cardiac involvement. The administration of high voltage roentgen therapy seemed to cause temporary improvement.

REPORT OF CASE

B. U., a white woman aged 27, entered the Cleveland City Hospital on Dec. 21, 1929. She had had enlarged cervical lymph nodes for one month. A biopsy revealed Hodgkin's disease. During the following years high voltage roentgen therapy was administered periodically to the neck, axillas, groins and trunk for involvement of the lymph nodes in these regions.

In 1935 she was in good enough health to have an operation for appendicitis and three months later one for chronic cholecystitis and cholelithiasis.

In January 1938 she began to be short of breath and to cough. A film of the chest, Jan. 12, 1938, showed enlargement of the mediastinal nodes and considerable infiltration of the upper lobe of the left lung, presumably due to Hodgkin's disease. The transverse diameter of the cardiac shadow was 14 cm. as compared to 11 cm. in previous films.

The patient received roentgen therapy[3] to the upper left portion of the chest anteriorly and posteriorly in 100 r fractions daily for twenty days, starting January 19. Films of the chest taken January 31 and February 15 showed progressive diminution in the parenchymal involvement, and the patient felt better. The transverse diameter of the heart remained the same.

Shortness of breath recurred and a film of the chest on August 3 showed the cardiac shadow to be further enlarged, measuring 16.5 cm. in its transverse diameter (in relation to the greatest internal thoracic diameter of 29 cm.). The upper lobe of the left lung showed streaked mottling, presumably due to fibrous healing.

Because the shortness of breath became worse, the patient was admitted to the hospital November 3. She was given high voltage roentgen treatments to the upper anterior and posterior portions of the mediastinum in 200 r doses on ten successive days, starting November 14. She was discharged November 30, her condition being improved. Films showed that the transverse diameter of the cardiac shadow had decreased to 14 cm.

The dyspnea returned, however, and edema of the legs appeared. When admitted to the hospital Jan. 2, 1939, she presented the picture of heart failure. She was orthopneic, the legs were edematous, the liver was enlarged and tender and there was fluid in both pleural spaces. The heart was enlarged and showed a gallop rhythm but no significant murmurs. The blood pressure was 100 systolic and 70 diastolic. On the eleventh hospital day the cardiac mechanism was auricular fibrillation.

An electrocardiogram, January 4, showed tachycardia of unknown origin, low voltage of the QRS and T waves in all leads and an inverted T wave in lead 2. One taken January 11 showed auricular fibrillation, low voltage of the QRS and T waves in all leads and an inverted T wave in lead 2. The serum albumin was 3.5 Gm. per hundred cubic centimeters of blood and the globulin 2.3 Gm. per hundred cubic centimeters. A film of the chest, January 5, showed the mediastinal and cardiac shadows to be unchanged.

Rest in bed, digitalis, aspiration of the pleural effusions and symptomatic treatment brought about moderate improvement. The enlarged cardiac shadow, the myocardial insufficiency, the auricular fibrillation and the abnormal electrocardiogram were now ascribed to involvement of the heart by Hodgkin's disease. The patient was discharged January 30.

A recurrence of the symptoms and signs of myocardial insufficiency caused her readmission to the hospital March 2. The cardiac mechanism at this time was normal. A film of the chest showed infiltration in the right hilus region and the upper half of the right lung. The infiltration in the hilus region made it impossible to measure the width of the cardiac shadow. The patient was given high voltage roentgen therapy to the upper half of the mediastinum anteriorly in 200 r doses on alternate days for four treatments, from April 18 to April 24. She also received digitalis and mercurial diuretics. She was discharged April 29, her condition being improved.

The patient was in the hospital again from June 6 to June 10. Her general condition was slightly improved. The cardiac mechanism was normal. The mottling in the right lung field had diminished. The transverse diameter of the cardiac shadow had further decreased, measuring 13 cm. There was evidence of only slight myocardial insufficiency.

She returned to the hospital on August 7 and stayed until September 3, at this time receiving roentgen therapy for enlarged abdominal lymph nodes. There was no evidence of heart failure.

During the next nine months, although her condition was poor, she was well enough to be cared for in the outpatient clinic, where periodically she received an injection of a mercurial diuretic.

June 10, 1940 she was admitted to the hospital in a moribund condition, emaciated, semistuporous and orthopneic. The cardiac mechanism was normal. The legs were edematous. She died fifteen hours later.

The clinical diagnosis was Hodgkin's disease with involvement of the lungs, mediastinum and heart and chronic myocardial insufficiency.

AUTOPSY

Autopsy was performed by Dr. A. E. Margulis seven hours after death. The body was normally developed and poorly nourished. Except for pallor of the skin and mucous membranes and pitting edema of the extremities, the external examination was negative.

The base of the heart, the aorta, the pulmonary artery and veins and the venae cavae were encased in a dense tumorous mass which filled most of the mediastinum and extended into both lungs. This tissue was dense and cut with definite resistance. The sectioned surface was gray and uneven, with slightly raised opaque areas intermingled with depressed, somewhat translucent areas. The lumens of the great vessels were not occluded or invaded, although they were compressed more or less and it was impossible to trace the venae cavae completely.

The mediastinal mass had extensively invaded the atrial walls, particularly that of the right atrium. Near the opening of the inferior vena cava the tumor tissue extended through the atrial wall and appeared as an irregular polypoid mass in the right atrial cavity. The uninvolved portions of the heart were normal. The pericardial space over the atria was obliterated—otherwise it was normal.

The right lung was more or less completely infiltrated with tissue similar to and continuous with the mediastinal tissue. The left lung was uninvolved except in the hilus region. There was a single subpleural nodule measuring 1 cm. in diameter and located in the upper lobe.

In the retroperitoneal area encasing the aorta and the inferior vena cava there was a large dense ovoid mass of tumor tissue measuring 8 by 8 by 15 cm. and extending from the diaphragm

From the Department of Medicine of Cleveland City Hospital and Western Rerserve University School of Medicine.

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2. Harrell, G. T.: Hodgkin's Disease with Invasion of Pericardium and Gallbladder: Review of Literature and Report of Case with Autopsy, Arch. Path. **28:** 58-64 (July) 1939. Ritvo, Max: Hodgkin's Disease: Report of a Case with Unusual Longevity and Invasion of the Heart and Pericardium, New England J. Med. **223:** 891-895 (Nov. 28) 1940.

3. The factors utilized in the high voltage roentgen therapy were 200 kilovolts, 20 milliamperes and 0.75 mm. of copper plus 2.0 mm. aluminum filtration. The target-skin distance varied between 50, 60 and 70 cm. The size of the ports varied from approximately 50 to 150 square centimeters.

to the second lumbar vertebra. This tissue had destroyed the left adrenal and had invaded the capsule of the liver at one point.

The spleen was moderately enlarged, being the seat of tumor involvement and chronic passive hyperemia. The other viscera showed chronic passive hyperemia. No lymphadenopathy was discovered.

Microscopically the tumor tissue had all the histologic features of Hodgkin's granuloma. Sections from the base of the heart showed extensive involvement and destruction by this tissue of the parietal and visceral pericardium, and to a lesser extent of the myocardium. The uninvolved myocardium was normal.

The spleen and right lung showed considerable Hodgkin's tissue and chronic passive hyperemia.

The diagnosis was Hodgkin's disease with involvement of mediastinum, lungs, great vascular trunks, pericardium, heart, spleen, retroperitoneum, left adrenal and capsule of the liver.

COMMENT

The rarity of involvement of the heart or pericardium in Hodgkin's disease has been mentioned. This appears to be the first reported instance in which this condition has been diagnosed in life. In a previous study,[4] the development of congestive failure without apparent cause in a patient with a malignant neoplastic disease was found to be the most important clinical finding pointing to cardiac metastases. Such a condition was present in this patient and, together with the auricular fibrillation, the enlargement of the cardiac shadow by roentgenogram and the pathologic electrocardiogram made the clinical diagnosis of involvement of the heart likely.

This is the second reported instance in which high voltage roentgen therapy has been used in the treatment of involvement of the heart by a tumor. Shelburne and Aronson[5] have described a patient who suffered from a malignant tumor which had invaded the pericardium and septum of the heart and which was treated with high voltage roentgen therapy. There was strong evidence that the tumor was largely destroyed and that the function of the heart was not impaired by the treatment. An autopsy was not done.

In the case here reported, there also is evidence that the high voltage roentgen therapy was beneficial. There always was subjective and objective improvement following roentgen therapy. Furthermore, the patient lived in a fair degree of comfort for about one and a half years after myocardial insufficiency due to cardiac involvement had appeared. This is contrary to the usual experience, for the refractory character of the decompensation in tumors of the heart has been stressed by many observers.[6] The fact that the auricular fibrillation was not permanent may have been due to the effects of the irradiation, although this cannot be proved.

The total length of this patient's illness deserves mention. Jackson[7] concluded that on an average the patient with Hodgkin's granuloma lasts about two and a half years, 75 per cent die within three years and very few survive more than ten years. This patient lived ten and a half years from the time of the original biopsy.

SUMMARY

The development of congestive failure without apparent cause in a patient known to have Hodgkin's disease led to a clinical diagnosis of involvement of the heart. High voltage roentgen therapy seemed to cause improvement, the patient living in a fair degree of comfort for one and a half years after the first appearance of decompensation. Postmortem examination showed extensive involvement of both atria by Hodgkin's granuloma. The heart was normal otherwise.

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LYMPHOGRANULOMA VENEREUM OF THE HYPOPHARYNX AND LARYNX

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Lymphogranuloma venereum is a systemic venereal disease caused by a filtrable virus and having an incubation period of from three to thirty days. It is characterized by a chronic granulomatous lesion which is generally confined to the anorectogenital region. Occasionally it is found in other parts of the body but rarely in the pharynx or larynx. Lymphogranuloma venereum must be differentiated from granuloma inguinale. The latter begins as an infection of the skin and subcutaneous tissues in which Donovan bodies can be demonstrated and is found almost exclusively in Negroes. On the other hand, lymphogranuloma venereum does not originate in the same structures and is not confined to Negroes.

Buboes of venereal nature were known centuries ago, but it was not until 1913 that Durand, Nicolas and Favre[1] demonstrated that the disease causing them was transmitted through sexual intercourse. Hellerström[2] stated that the description given by Greek, Roman and Arabian physicians of some buboes coincided with that of lymphogranuloma venereum. It was well described by Chassaignac[3] in 1859. A dermal sensitization test which bears his name was elaborated by Frei[4] in 1925. The increase in travel facilities in recent years has played a major part in the introduction and spread of this condition to practically all parts of the United States.

Fig. 1.—Distribution of lymphogranuloma venereum on the soft palate and pharynx.

The course of lymphogranuloma venereum seems to depend on the site of inoculation; it follows an acute, subacute or chronic course. The virus exists in human beings as long as the local lesion is present. The primary lesion usually occurs on the external genitalia but may be found on the surface of the skin or in the mouth, throat, rectum or eye. The first manifestation is a small ulceration or herpes-like vesicles on the genitalia. These usually heal in about five days; two or three weeks later, however, the regional lymphatics become involved. This adenitis may subside but usually continues as a low grade process. The glands become matted

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2. Hellerström, S.: A Contribution to the Knowledge of Lymphogranuloma Inguinale, Acta dermat.-venereol., supp. 1, 1929, pp. 5-224.

3. Chassaignac, C. M. E.: Traité pratique de la suppuration et du drainage chirurgical, Paris, V. Masson, 1859, p. 354.

4. Frei, Wilhelm: Eine neue Hautreaktion bei Lymphogranuloma Inguinale, Berl. klin. Wchnschr. **4:** 2148 (Nov.) 1925.

together and may undergo disintegration. At first the skin becomes fixed; this is followed by tissue necrosis, from which fistulas result. The rectum is usually involved late in the course of this disease and becomes strictured as a result of healing. Metastatic lesions may develop at distant points.

When examined microscopically, the tissues display superficial necrosis superimposed on a base of granulation tissue. Epithelioid cells exist in large numbers; plasma cells, monocytes, eosinophilic and neutrophilic polymorphonuclear leukocytes, endothelial cells and occasional giant cells are found in a fibrinous mesh. Sections of glands disclose multiple minute punctate abscesses with peripheral piling up of endothelial cells and reticular cells and an occasional giant cell. The microscopic picture is not easily distinguished from that of syphilis or tuberculosis.

The progress of the disease is usually insidious. Such symptoms as general malaise, headache, anorexia, fever, chills and sweats and local pain are associated with the regional adenitis. The Frei test is positive for from ten to twenty-one days after the appearance of the enlarged glands. The Kahn test may be positive during the early stages but becomes negative. There are cases, however, in which periods of quiescence are followed by periods of renewed activity. The course of the disease in the mouth and pharynx is slow and stubborn, although some cases have been known to clear without even being recognized.

Very few cases involving the pharynx, and practically none affecting the larynx, have been recorded. Lymphogranuloma venereum of the tongue, however, is not uncommon. In the pharynx the disease must be differentiated from other chronic granulomas, such as those caused by syphilis, tuberculosis and fungous infections. The Frei test is the most dependable diagnostic criterion; next in importance is the increased protein content of the blood.

Metastatic lesions may occur in the brain, heart, muscles and other soft tissues, causing symptoms peculiar to the structures involved. About 30 per cent of patients recover from lymphogranuloma venereum without treatment. The disease may last a long time.

Apparently there is no form of therapy that is consistently effective. Brilliant results have been reported after the use of roentgen therapy and drugs of the sulfonamide group. Recently, Kornblith [5] has reported striking results from the use of sulfthiazole and Frei antigen intravenously.

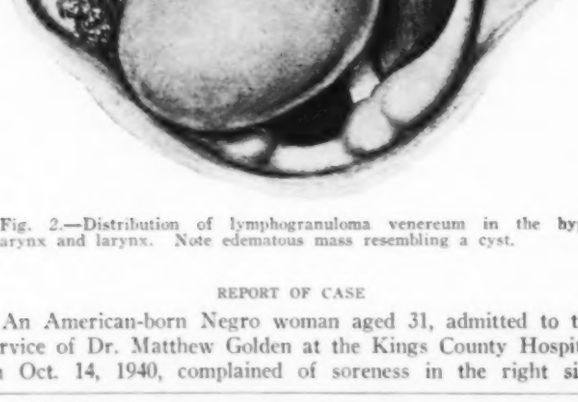

Fig. 2.—Distribution of lymphogranuloma venereum in the hypopharynx and larynx. Note edematous mass resembling a cyst.

REPORT OF CASE

An American-born Negro woman aged 31, admitted to the service of Dr. Matthew Golden at the Kings County Hospital on Oct. 14, 1940, complained of soreness in the right side of the throat which had lasted for six months. Her local disease had begun one year before admission, at which time she experienced discomfort in the back of the right side of the nose, and a feeling of fulness in the adjacent ear. She recalled that three months after the onset of her illness she had felt tired and weak and had lost 5 pounds (2,268 Gm.). At the same time she had felt a soreness and swelling of both sides of the upper part of the neck in the region of the angle of the mandible. Her temperature remained about 101 F. She consulted a physician who advised tonsillectomy, which was performed under local anesthesia in December 1939.

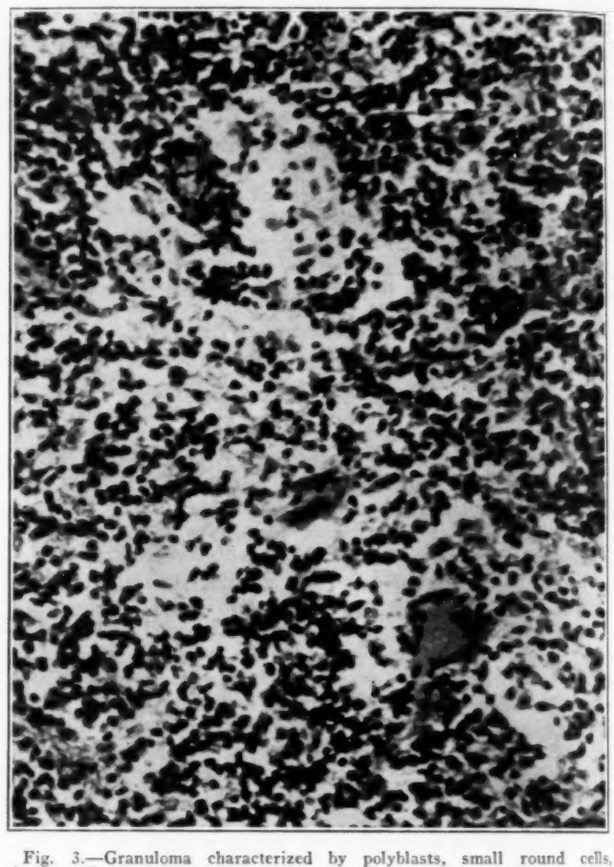

Fig. 3.—Granuloma characterized by polyblasts, small round cells, plasma cells and reticuloendothelial cells from section of the pharynx. Giant cells are present.

All local symptoms disappeared for three months, after which time they returned and persisted until recently. In addition, there have been occasional night sweats, expectoration of blood-tinged sputum and paroxysms of nonproductive cough. Pain has never been a prominent symptom and the patient has never experienced dysphagia. At one time her speech was slightly guttural. She could furnish no information concerning the manner in which the lesion originated. Her medical history was otherwise irrelevant.

Physical examination revealed nothing of significance except the local disease. On the right side the lesion included the tonsillar fossa and pillars, the soft palate, the lateral pharyngeal wall, the nasopharynx, hypopharynx and larynx. In the soft palate it extended as a narrow ribbon along the base of the uvula to the arch of the tonsillar fossa of the other side. The disease process consisted of a diffuse, irregularly distributed superficial, smooth ulcerogranuloma. The entire area was irregularly covered by a thin, film-like, milky exudate. On palpation, the involved structures were firm; they did not bleed readily.

The laryngeal mirror disclosed the same type of lesion in the hypopharynx; in the larynx, however, it was somewhat different. Originating from the aryepiglottic fold, there was a pale, grayish, smooth, firm, cystlike mass about the size of a pecan. It was movable and filled the brim of the larynx,

5. Kornblith, B. A.: Lymphogranuloma Venereum Treatment, in Blumer's Practitioner's Manual, Philadelphia, J. B. Lippincott Company, 1940, chapter 44, p. 511.

so that a view of the vocal cords was obscured. It was pulled into the glottis during forceful inspiration. The cyst-like mass was removed by snare during direct laryngoscopic exposure; it was found to have originated from the posterior border of the aryepiglottic fold. The fold remained as a firm, swollen, grayish structure. The larynx was otherwise uninvolved.

The patient was studied for evidences of syphilis and tuberculosis and found to be free of them. Her blood cells were normal as to type and number, with the exception of the red cells, which numbered 3,600,000 per cubic millimeter. The Frei test gave a strongly positive reaction. The total protein content of her blood had increased to 9.2 mg. per hundred cubic centimeters and the albumin-globulin ratio was reversed. There was no evidence of active or healed rectal disease such as exists in most cases of lymphogranuloma venereum. Biopsy was performed on the pharyngeal and laryngeal lesions and reported by Dr. W. W. Hala, pathologist to the Kings County Hospital as follows: "Microscopic examination discloses a section consisting peripherally of an epidermoid type of mucosa and beneath is a submucosa, the site of a more or less diffuse granulomatous inflammation. Incorporated in the deeper zones is an area of mucous glands and a small piece of cartilage. The granulomatous lesion is characterized by an intense invasion, particularly by polyblasts, and included among these are small round plasma and larger reticuloendothelial cells.

"There are some areas just beneath the mucosa which appear to be miliary pseudotubercles. Throughout the submucosa is a more or less hyaline-like stroma and many of the capillaries are filled with hyaline thrombi. In one of the sections there are typical giant cells simulating the Langhans giant cells of tuberculosis. There are practically no caseous areas, although in some of the hyaline stroma heretofore spoken of the tissue appears to be undergoing necrosis.

"In general, the histologic picture suggests so-called lymphogranuloma venereum."

Roentgen therapy was given without benefit. During six months of observation the lesions seemed to have penetrated slightly beyond the surface.

Treatment with Frei antigen was administered as follows: 0.3 cc. was injected intravenously every three days for two weeks; this was followed by a period of two weeks during which no treatment was given. Three such courses were given.

Recent examination revealed that the soft palate and adjacent structures which were previously tough, firm and ulcerated were now soft and epithelized. The tonsillar pillars, except for the right posterior, which was absent, and the piriform fossa appeared healthy. The larynx presented a healthy, slightly thickened mucosa, especially in the region of the right arytenoid process and its corresponding aryepiglottic fold, where a firm grayish lesion had previously existed.

136 East Sixty-Fourth Street.

ALLERGIC DERMATITIS FOLLOWING EXPOSURE TO TEAR GAS (CHLORACETOPHENONE, CN)

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AND
TOM STANDER, M.D., Major, M. C., U. S. Army
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While we were attending the fourth refresher course (April 1941) at the Medical Field Service School, Carlisle Barracks, Pa., one of us (T. S.) suffered a severe attack of acute dermatitis following a short exposure to tear gas (chloracetophenone, CN) in the course of a routine demonstration of war gases in the gas chamber in which all members of the class participated.

Experienced medical officers assure us that such a reaction is very rare, if indeed not unheard of.

While our present location and duties do not permit us ready access to the literature, and we therefore are unable to cite previous reports of this reaction, it is our belief that a generalized cutaneous allergic reaction to tear gas (CN) is exceedingly rare.

REPORT OF CASE

T. S., aged 43, who had been inducted into the federal service approximately two months before and since April 1 had been a student in the Medical Field Service School, on the afternoon of April 16 passed through the gas chamber containing approximately one tenth the concentration of chloracetophenone that might be expected under field conditions. During the demonstration all students in the class (559) spend about five minutes within the gas chamber, protected by the training mask, at the end of which time they are required to remove the mask and make their way to the exit of the gas chamber about 10 or 15 feet distant. All students were dressed alike in regulation wool shirts and slacks.

Within five minutes after exit from the gas chamber, the patient complained of generalized itching of the skin, which became progressively more severe during the early evening, until by 9 p. m. (four and one-half hours after the exposure) there was diffuse and intense reddening of the skin over the entire body excepting the feet and the portions of the face covered by the training mask. His temperature was 102 F. The following day was spent in severe discomfort because of the itching, although the patient continued his duties as a member of the student officers class. His temperature by that evening had risen to 103 F. The second day following the exposure small blebs 1 to 2 mm. in diameter appeared in many places over the body in moderate numbers. The patient felt ill and very uncomfortable and had no desire for food. The generalized reddening of the skin continued and the temperature remained elevated, varying from 102 F. to 103 F. During this day the patient remained in his quarters.

During the afternoon, severe subcutaneous edema developed over the scalp and forehead, which strikingly altered the appearance of the face, giving it a grotesque, misshapen contour. That part of the forehead not protected by the mask appeared to overhang the orbital ridge, giving the eyes a deeply sunken aspect. Mild generalized edema was apparent in all subcutaneous tissue. Moderate edema of the scrotum developed. The generalized itching of the skin continued, and a mild rash and reddening of the skin appeared on all exposed parts, that is everywhere except the feet and the facial area protected by the mask. By evening there was a severe headache.

Treatment, in the dispensary up to this time, had consisted chiefly of the liberal application of calamine lotion to all affected parts. Because of severe headache and general malaise, the patient was sent to the station hospital, where with general supportive measures, in the course of four days, the signs and symptoms gradually subsided and the temperature returned to normal, although those who knew the patient well did not consider him to be fully recovered until a full month had elapsed. The desquamation of skin, profuse after the sixth day, gradually diminished, though it, too, did not entirely cease until some three or four weeks following the exposure.

Of particular interest in the case is the fact that once before the patient had, on transient exposure by passing through a cloud of tear gas during a course of instruction while in the National Guard, experienced itching of the skin which, though remembered seventeen years after the event, was not incapacitating. (The exposure in this instance was, of course, not nearly so great as that experienced in the gas chamber.)

COMMENT

It is our belief that the case is one of idiopathic hypersensitivity to tear gas (CN) and that it may be considered an allergic type of reaction in all parts of the skin exposed to the tear gas.

We know of but one other case, one of "mild dermatitis," occurring in an officer of the Twenty-Seventh Division, reported to us in a letter from an officer [1] who had also observed the case here reported.

CONCLUSION

The severe subcutaneous edema and desquamation following exposure to a light concentration of chloracetophenone (tear gas) is considered an allergic reaction to the chloracetophenone.

1. Personal communication from Major Wilbur R. Southward Jr., One Hundred and Fourth Medical Regiment, Fort George G. Meade, Md.

THE USE OF HISTAMINASE BY MOUTH IN PREVENTING SYSTEMIC REACTIONS TO PARENTERAL LIVER EXTRACT

C. B. TAYLOR, M.B., AND D. W. HILGER, M.D., MINNEAPOLIS

The relative infrequency of severe reactions to liver extract is indicated by the fact that there are only 34 cases reported in the literature.[1] The important data on these cases are shown in the accompanying table. In all but 2 instances the preparation was given parenterally. In many of the cases there was no previous history of abnormal sensitivity. That the sensitivity is acquired is indicated by the fact that in nearly every instance reactions occurred only after a number of injections had been given. The nature of the reactions varied from prolonged, generalized urticaria or pruritus to shocklike symptoms. It has been demonstrated (Criep[1]) that the sensitivity is to the liver as an organ and not to the general animal antigen. Passive transfer of sensitivity was accomplished in all cases in which it was attempted. One exception to these statements was the case of Milbradt's[1] in which there was sensitivity to the benzene ring compound used as a preservative in the liver extract. Ultimate therapy for these patients has been either discontinuance of treatment if the patient did not have pernicious anemia, substitution of oral therapy or desensitization by gradually increasing doses of liver extract. It appeared that the last method was accomplished in 5 instances.

We have had an opportunity of studying 2 patients who had a strong sensitivity to parenteral liver extract.

CASE 1.—A woman aged 75 stated that she could not eat beef because it caused her to have nausea and griping abdominal pains. In June 1937 it was proved that she had pernicious anemia and she was given 3 cc. of "campolon"[2] intramuscularly daily for thirteen days. An oral preparation was then given for several months. In November 1939 she was given 1 cc. of liver extract (exact type unknown) intramuscularly on two occasions without reaction and on May 25, 1940 she was started on 1 cc. of "reticulogen"[3] intramuscularly, and this was repeated at weekly intervals until July 25, 1940 and thereafter once a month. After the fifth injection, she complained of severe generalized pruritus and nausea and vomiting. This recurred more severely with each injection, so that in October 1940 she refused further injections. On Jan. 28, 1941, she was admitted to the University of Minnesota Hospital in an extremely weak condition and with a hemoglobin level of only 2.8 Gm. per hundred cubic centimeters of blood. She was given 2 cc. of "reticulogen" intramuscularly without reaction. Ten days later when the patient's hemoglobin was 5 Gm. per hundred cubic centimeters of blood, and she was considerably stronger, she was again given 2 cc. of the preparation intramuscularly. Within fifteen minutes, severe generalized pruritus developed which lasted from fourteen to sixteen hours and was not relieved by epinephrine. She also vomited. Three weeks later, after having received 50 units of histaminase[4] orally on the day of injection and 60 units daily for the two

Reported Cases of Severe Reactions to Liver Therapy

Author	Date	No. of Cases	Method of Treatment	Allergic History	Prausnitz-Küstner Reaction	Intradermal Tests: Liver Extract	Intradermal Tests: Liver Antigen	Intradermal Tests: Animal Antigen	Ultimate Treatment
Schlesinger	1930	1	Parenteral						
Matzger	1931	1	Parenteral	+	..	+	+	..	Oral hog stomach
Held and Goldbloom	1931	1	Oral	..	..	..	..	..	Oral liver
Strandall and Hammar	1932	1	Parenteral	+	..	..	.	..	Oral liver
Engel	1933	1	Parenteral	..	..	+	..	..	Desensitized
Murphy	1933	2	Parenteral	..	..	..	..	..	Desensitized (1 case)
Grun	1933	1	Parenteral	..	+	+	..	..	Desensitized
Segerdahl	1934	1	Parenteral						
Kuipers	1935	1	Parenteral	0					
Roovers	1935	3	Parenteral						
Milbradt	1935	1	Parenteral	..	..	..	..	..	Sensitive to one benzene ring preservative
Chaudhuri	1936	1	Parenteral						
Geijskes	1936	2	Parenteral						
Lasch	1936	1	Parenteral	+	+	+	..	..	Oral hog stomach
McHenry	1936	3	Parenteral	..	..	..	..	..	Desensitized
Ungley, Davidson and Wayne	1936	1	Parenteral						
Hofstrom	1937	2	Parenteral	..	..	..	..	..	Oral therapy
Markoff	1938	3	Parenteral						
Krantz	1938	1	Parenteral	..	..	+	..	0	Desensitized
Gardner	1938	1	Oral	0					
Diena	1938	1	Parenteral	+	+	+			
Criep	1939	1	Parenteral	+	+	+	+	0	Oral therapy
Jones	1939	1	Parenteral	0	+	+	..	0	Parenteral horse liver extract
Diefenbach and Yuskis	1939	1	Parenteral	0	..	..	..	..	Oral therapy
Pache	1939	1	Parenteral	..	+	+	+	0	Oral therapy

From the Division of Internal Medicine, University of Minnesota Hospital.

1. The literature includes:

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Engel, K.: Anaphylactic Reactions in Liver Preparations: Case of Pernicious Anemia, Bol. Assoc. méd. de Puerto Rico **25:** 326 (May) 1933.

Murphy, W. P.: Maintenance of Normal Blood in Pernicious Anemia by Means of Intramuscular Injections of a Solution of Liver Extract, Am. J. M. Sc. **186:** 271 (Aug.) 1933.

Grun, G.: Allergic Reactions to Injection of Liver Preparation, Orvosi hetil. **77:** 736 (Aug. 19) 1933.

Segerdahl, E.: Om behandling av perniciös anämi med intermittenta leverextraktinjektioner, Svenska läk.-tidning. **31:** 1706 (Dec. 28) 1934.

Kuipers, F. C.: Overgevoeligheids reactie Na Leverinspuiting, Nederl. tijdschr. v. Geneesk. **79:** 2771 (June 8) 1935.

Roovers, J. J. C. P. A.: Arts, Onaangename Verschijnselen Na Pernaemoninspuitingen, Nederl. tijdschr. v. geneesk. **79:** 5148 (Nov. 2) 1935.

Milbradt, W.: Ueber eine eigenartige scheinbare Allergie gegen Leberextrakt, Dermat. Wchnschr. **101:** 1595 (Dec. 21) 1935.

Chaudhuri, B. M.: Urticarial Rashes After Campolon Injection, Calcutta M. J. **30:** 731 (June) 1936.

Geijskes, P. A. G.: Onaangename Verschijnselen Na Toediening von Pernaemon, Nederl. tijdschr. v. geneesk. **80:** 1915 (May 2) 1936.

Lasch, F.: Ueber allergische Symptome bei parenteraler Lebertherapie, Wien. med. Wchnschr. **86:** 126 (Feb. 1) 1936.

McHenry, E. W.: Liver Therapy in the Treatment of Pernicious Anemia, Canad. Pub. Health J. **27:** 421 (Sept.) 1936.

Ungley, C. C.; Davidson, L. S. P., and Wayne, E. J.: Treatment of Pernicious Anemia with Dakin and West's Liver Fraction (Anahaemin), Lancet **1:** 349 (Feb. 15) 1936.

Hofstrom, T. G.: Anafylaktisk chock i samband med heptomininjektion, Svenska läk.-tidning. **34:** 927 (June 26) 1937.

Markoff, N.: Zur Kenntnis einiger Arzneimittelüberempfindlichkeiten, Schweiz. med. Wchnschr. **68:** 1016 (Aug. 27) 1938.

Krantz, C. I.: Anaphylactic Reaction Following Medication with Parenteral Liver Extract, J. A. M. A. **110:** 802 (March 12) 1938.

Gardner, J. W.: Allergy to Oral Administration of Liver Concentrate, J. A. M. A. **110:** 2003 (June 11) 1938.

Diena, D.: Ipersensibilita a preparati epatici, Gior. d. r. Accad. di med. di Torino **101:** 462 (Sept.) 1938.

Criep, L. H.: Allergy to Liver Extract, J. A. M. A. **110:** 506 (Feb. 12) 1938.

Jones, C. A.: Allergic Reactions Following the Parenteral Administration of Liver Extract, New Internat. Clin. **3** (2): 258 (Sept.) 1939.

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Pache, H. D.: Beobachtungen bei Liver Allergie gegen Leberextrakte, Deutsche med. Wchnschr. **65:** 1192 (July 28) 1939.

2. A preparation of liver extract put out by Winthrop Chemical Company, Inc.

3. Eli Lilly & Co.

4. "Torantil" (Winthrop Chemical Co., Inc.) 5 unit tablets.

preceding days, she tolerated 2 cc. of "reticulogen" intramuscularly without any reaction. Since that time the patient has been given 2 cc. injections on seven occasions when she was taking histaminase orally. She had no reactions. On four alternate occasions when she was not receiving histaminase she was given similar quantities of liver extract, and each time severe, prolonged, generalized pruritus and vomiting developed. There was no eosinophilia.

The "reticulogen" used was extracted from pork livers. Concentrated liver extract [5] obtained from beef livers caused even a more severe reaction when injected intramuscularly. By intradermal tests the patient was shown to be sensitive to five commercial, parenteral liver extracts whether the animal source was swine or beef. With intradermal tests she was sensitive to beef, swine and chicken liver antigen but was sensitive only to the beef general antigen and not to the general antigen of swine or chicken. This is understandable when one recalls that the patient had a history of allergy to ingested beef. The intradermal tests with substances to which the patient was sensitive were definitely less pronounced when she was receiving histaminase. These reactions were checked frequently, so that we are convinced of their accuracy. It should be stressed, however, that at no time did the administration of histaminase affect the response to intradermal histamine.

On five occasions when the patient was not receiving histaminase the passive transfer of sensitivity for "reticulogen," beef swine and chicken liver antigens was strongly positive. When the patient was receiving the histaminase the passive transfer tests were definitely less positive or negative. Passive transfer was demonstrated for the beef general antigen. Precipitin tests were positive for "reticulogen" and the liver antigens but not for beef general antigen. This is understandable, since the sensitivity to beef is a true atopy while the sensitivity to liver extract and liver antigen is an acquired sensitivity to unusual contact with a foreign substance received by injection. True atopy according to Coca [6] shows passive transfer but no precipitins, while the acquired sensitivity to foreign substances injected shows both of these phenomena. By quantitative determinations of the degree of flocculation with the Evelyn photoelectric colorimeter, it was strongly suggested that the precipitin test was decreased when the patient was taking histaminase.

CASE 2.[7]—A man aged 64 with no previous history of abnormal sensitivity was proved to have pernicious anemia in 1933 and was treated for several months with parenteral liver extract. He had no reactions, but because of his dislike for intramuscular injections he was given oral liver preparations for more than seven years. He was but poorly controlled during this period. In May 1941 he was started on 1 cc. injections of concentrated liver extract [5] because oral therapy was not maintaining his hemoglobin and red blood cell count at a satisfactory level. Within ten minutes after the first injection severe generalized urticaria developed. This persisted for more than an hour in spite of treatment to relieve it. On five succeeding injections similar attacks occurred. On two occasions when he was taking oral histaminase he had no reactions. By intradermal tests he was shown to be sensitive to the liver as an organ and not to the general animal antigen. He differed from the first patient in that he had no atopic sensitivity. The intradermal reactions to liver extract were sharply reduced or negative when he was taking histaminase. The reactions to precipitin tests were positive for the liver extract and liver antigen but not for the general antigen of the animal source.

SUMMARY AND CONCLUSIONS

1. Two patients with pernicious anemia acquired severe sensitivity to parenteral liver extract.

2. The oral administration of histaminase for two days before and on the day of injection completely prevented the systemic reactions to the parenterally administered liver extract.

3. Definite, temporary reduction of the intradermal sensitivity to liver extracts followed the administration of histaminase. This was not true for the histamine sensitivity, however.

4. The passive transfer of sensitivity to the liver antigen became much less noticeable following histaminase.

5. We feel that a method by which the liver extract can be administered parenterally in therapeutic doses, as was done in the cases reported, has definite advantages over the previous methods of attempting to solve the problem of acquired sensitivity to liver.

5. Lederle Laboratories, Inc.

6. Coca, A. F.; Walzer, Matthew, and Thommen, A. A.: Asthma and Hay Fever in Theory and Practice, Springfield, Ill., Charles C. Thomas, Publisher, 1931.

7. Dr. Phillip Hallock gave us his permission to study this case.

Special Article

THE ÉMIGRÉ PHYSICIAN IN AMERICA, 1941

A REPORT OF THE NATIONAL COMMITTEE FOR RESETTLEMENT OF FOREIGN PHYSICIANS

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The National Committee for Resettlement of Foreign Physicians was organized [1] more than two years ago to deal with one of the problems that have arisen out of the present European upheaval. Its name is self explanatory. Its objectives were few but vital:

1. To evaluate the eligibility of individual émigré physicians to practice medicine in the United States.

2. To assist those who were found competent in preparing for examinations and for American medical requirements.

3. To further their resettlement in those parts of the United States where medical services are needed.

The task has not been made any easier by the opposition which has arisen in certain quarters. Where once a medical degree from any noted European university was considered proof of outstanding scholarship, now there is a deplorable tendency to swing in the other direction. In incomprehensible isolation, legislators and others build bars around their own small domains, arbitrarily cutting off those valuable immigrants whose professional ability could contribute to the health of the whole nation. It is not the European physician who has changed; it is, at least partially, the American attitude. It is not the universities which they represent which have changed, except in the years since the Nazis have crushed culture in one European country after another. This reversal of attitude has become a major problem to the committee and hampered its work.

For further information, apply to Harry D. Biele, Secretary, National Committee for Resettlement of Foreign Physicians, 165 West 46th Street, New York.

1. Edsall, D. L.: A Program for the Refugee Physician, J. A. M. A. **112:** 1986 (May 13) 1939.

In its activities the committee has been conscious of its responsibility to the nation as a whole, to the profession and to the individual men and women involved. There is involved here a human problem that cannot be overlooked by members of a calling dedicated to the alleviation of mental as well as physical suffering.

TABLE 1.—*Immigrant Physicians Admitted to the United States*

From the U. S. Department of Labor Statistics

Year	Total	Jewish
1933	187	41
1934	353	163
1935	304	137
1936	462	273
1937	533	310
1938	738	475
1939	1,384	1,126
1940	1,095	832
	5,056	3,357
1941 (our estimate)	500	
	5,556	

We have been alert to the need for protecting American physicians from the possibility of unfair competition by émigrés. This involved careful planning and a long-range program of education of the refugees. The objective was the complete integration of the émigré physician to the American scene.

We recognized the great need for adequate medical service in many rural communities. And the apparent lack of interest in these areas among American physicians is giving us an opportunity to settle these physicians where they are really needed.

American medicine has already profited by the accomplishments of many of the recent immigrants who were given a chance to resume their work: Schindler (Chicago) in gastroscopy, Bergmann and Schoenheimer (New York) and Thannhauser (Boston) in metabolism, Witebsky (Buffalo) in hematology, and others.

TABLE 2.—*Distribution by Age (in Half Decades) of Two Thousand One Hundred Foreign Physicians Registered with the National Committee*

Age	Approximate Percentage
Over 65	1.5
60-64	4.0
55-59	5.5
50-54	10.0
45-49	18.0
40-44	25.0
35-39	9.0
30-34	18.0
25-29	9.0
Total	100.0

ACTIVITIES OF THE COMMITTEE

The starting point for our own work was to set up committees and voluntary boards to evaluate the qualifications of registrants. At present the national committee is composed of state committees in Massachusetts, New York, New Jersey, Maryland, Connecticut, Virginia, Missouri, California, Colorado and Texas; cooperating groups or agencies are located in Louisiana, Tennessee, Minnesota, Ohio and Pennsylvania. State committees embracing the nine Pacific Slope states are now in the process of formation. From each of the state committees several physicians were chosen to serve on the national committee.

Within each state the special committees act as advisory groups to the émigré physicians and cooperate with state licensing boards and local medical societies. They also locate rural opportunities and internships, and they evaluate individual émigrés considered for placement in practice or institutional work.

The New York State Board of Medical Examiners requires that candidates possess first citizenship papers and have passed an English examination. To exclude unfit persons from committee assistance it was the policy of the national committee in New York to require proficiency in English and a favorable professional evaluation by its advisory committee composed of American physicians, as well as approval of credentials by the New York Board of Medical Examiners.

For New York, where the concentration of émigré physicians is so great (about fifteen hundred in practice and fifteen hundred unlicensed), the national committee has adopted new rules in an attempt to relieve the pressure on the state board of examiners. At least one year's American internship is now required. All registrants who are acceptable for examination by the National Board of Medical Examiners are required to take this examination if they ask sponsorship of the committee.

TABLE 3.—*Distribution by Nationality of Two Thousand One Hundred Foreign Physicians*

Country of Origin	Approximate Percentage
Germany	48
Austria	24
Poland	10
Czechoslovakia	4
Hungary	4
Others (including Rumania, Yugoslavia, Lithuania, France, Latvia, Russia, Italy and The Netherlands)	10
Total	100

STATISTICAL ANALYSIS OF COMMITTEE REGISTRANTS

In 1939 we[2] had looked forward to a decline in medical immigration. Instead, with the advent of the World War medical immigration remained at a high level in 1940. The total immigration from 1933 through 1940 is shown in table 1. It is equivalent to the total number of graduates in a single year from our own schools.

Approximately 85 per cent of the émigré physicians are male, 15 per cent female. The sectarian proportion remains approximately the same as previously reported, namely 60 to 75 per cent Jewish, 40 to 25 per cent Protestant and Catholic (table 1).

Tables 2, 3, 4 and 5 showing age, nationality and educational background for a group of two thousand one hundred foreign physicians among the four thousand registered with the National Committee for the Resettlement of Foreign Physicians may be considered representative of the entire group of émigré physicians in the United States. Most of these physicians are in the "middle years," looking ahead to many years of professional service (table 2).

2. Edsall, D. L.: The Emigré Physician in American Medicine, J. A. M. A. **114**: 1068 (March 23) 1940.

Within the last year, many qualified practitioners have arrived in this country from such nations as the Netherlands, Belgium, France and Norway (tables 3, 4 and 5).

As indicated in table 5, about half of the émigrés are interested in general practice. If those listed as interns are included, three fifths of the newcomers are available for this purpose. In addition, retraining specialists for general practice is consistently encouraged by the committee, particularly in the case of the younger men.

TABLE 4.—*Location of Medical Schools (by Nations) from Which Two Thousand One Hundred Émigré Physicians Were Graduated*

Nationality of Medical Schools	Approximate Percentage
German	44
Austrian	35
Czechoslovakian	5
Italian	5
Swiss	4
Hungarian	2
French	2
Others	3
Total	100

RESETTLEMENT

Seven hundred men and women have been located in American hospitals throughout the country: less than twenty-five complaints have been received regarding the physicians so resettled. From among the hundreds of physicians established in practice, only five have had to be relocated, and complaints have been made concerning only three. Occasional rumors of unethical conduct in practice have been brought to our attention, but in the great majority of instances investigated no proof has been obtained.

We find that the émigré physician who makes good and is accepted by the community and the medical fraternity is soon assimilated. But—and this is a sad reflection on our own outlook—if one émigré arouses attention by any single act, he frequently becomes the target of whispered, unfriendly and greatly exaggerated rumors which cause other émigrés to suffer stigmatization. Much gossip and false generalizations can be traced to prejudice, unfriendliness and an unwillingness to make allowance for the period of adaptation and assimilation necessary to transform an immigrant into an American.

During the process of sponsorship and resettlement, every effort is made to provide the émigré physician with facilities which will enable him to make a more rapid adjustment to American social conditions. The National Refugee Service, the American Friends' Service Committee and other agencies aid in the linguistic and cultural training of the émigré physicians. Special emphasis is placed on the preparation for general practice in the small communities.

When found suitable for sponsorship, émigrés are recommended for retraining in American medicine by placing them in internships. To date the committee has placed seven hundred émigrés in internships. (Many others have found such places without us.) Men found fit for practice after licensure have been carefully interviewed and, on the basis of recommendations by the advisory board, they have been settled in localities examined in advance. No physician has been placed without the approval of local authorities in a selected community. To date, about five hundred physicians have been successfully resettled in small towns or villages in New York, Ohio, Illinois, California, Colorado, Maryland, New Jersey and Virginia. Some diplomates of the National Board have been placed in Maine, Washington, Kentucky and Utah.

Recently the committee sent a field secretary on a trip through New York State to visit émigré doctors in their new homes and to report on the progress of their assimilation. After interviewing forty physicians settled in small communities, he concluded:

> Assimilation of a foreigner may be said to be complete when he is "in" as well as "of" his community. It may be said with assurance (for there were only two deviations) that in this group assimilation varies inversely with the size of the community—it is nearest completion in the villages, less so in the towns and least so in the cities.
>
> The two principal factors in these doctors' progress are their skill and their social adjustment. Almost all the foreign doctors are—within their varying environments—earning their way modestly. Some communities are enjoying better medical service then they ever had before—small villages from which previous doctors had moved, and farming areas with few physicians, some aged. For it is in these districts that the new doctors are, with the least dislocation of other established practices, rendering the best service.
>
> There are many evidences of acceptance in rural areas. Several alien doctors are members of local fire departments; one is on the state police list for calls in highway accidents; several are members of the local Grange and Rotary club; and a number of wives are members of local women's organizations and church groups.
>
> It is also clear that prejudice is a less hindering factor than competition. Resistance to the establishment of a new practice is not felt alone by aliens (Jewish or non-Jewish), especially in towns where the established doctors have formed a protective clique; disapproval and sometimes open hostility may be the fate of the newcomer, whatever his origin.

TABLE 5.—*Specialties of Two Thousand One Hundred Foreign Physicians Registered with the National Committee*

Specialty	Approximate Percentage
General practice	46.5
Internal medicine	12.5
Pediatrics	6.5
Obstetrics and gynecology	5.0
Dermatology	4.0
Neurology and psychology	3.0
Surgery	3.0
Ear, nose and throat	2.5
Ophthalmology	2.0
Tuberculosis	1.0
X-ray and radiology	1.0
Pathology	1.0
Orthopedic surgery	1.0
Physical therapy	1.0
Urology	1.0
Others	4.0
(Dentists)	(5.0)
Total	100.0

There have been, from time to time, "spy scares" involving the foreign doctors. One refers rather ruefully to the "crisis" he passed through last winter; another has heard reports of whisperings about his practices—principally that he is dispensing a slow-acting poison (!) in his pills. Both have emerged from these difficulties by attending conscientiously to their work.

If they are to remain in rural localities, it is essential not only that the doctors be adjustable to our way of life and our medical practices but also that their families fit into the pattern of the community. When one doctor says smilingly "my wife

has more callers than I" and another says "there's my best ambassador," as his little daughter enters the room, and a doctor's wife says "my son is out with the gang all day, he only comes in to eat," and another doctor's wife gets well into a tennis tournament in which she is the only woman, and the Progress Club elects a lady very recently of Berlin—then these families are well on the way to being good normal American citizens. This is in the best American tradition and it is not surprising. Are they any less desirable as fellow citizens

TABLE 6.—*Comparison of Population and Physicians by States* (1906 and 1940)*

State	1906			1940			Percentage Change in Ratio
	No. of Physicians	Population †	Ratio	No. of Physicians	Population ‡	Ratio	
Alabama	2,117	1,923,284	1: 910	2,075	2,881,000	1:1388	— 53
Arizona	203	133,338	1: 655	594	409,000	1: 688	— 5
Arkansas	2,322	1,366,119	1: 587	1,829	2,037,000	1:1112	— 90
California	3,990	1,564,286	1: 392	11,969	6,110,000	1: 512	— 31
Colorado	1,550	574,030	1: 371	1,964	1,069,000	1: 544	— 47
Connecticut	1,332	956,789	1: 720	2,598	1,738,000	1: 670	+ 7
Delaware	222	184,753	1: 834	339	260,000	1: 766	+ 8
Dist. Columbia	1,100	326,435	1: 296	2,243	623,000	1: 297	— 0.3
Florida	619	566,885	1: 916	2,276	1,657,000	1: 728	+ 20
Georgia	2,778	2,336,404	1: 842	2,825	3,073,000	1:1086	— 29
Idaho	259	183,738	1: 709	423	489,000	1:1153	— 62
Illinois	9,419	5,117,036	1: 543	12,188	7,863,000	1: 645	— 19
Indiana	4,908	2,614,223	1: 535	4,132	3,467,000	1: 840	— 57
Iowa	3,517	2,336,484	1: 663	3,084	2,548,000	1: 826	— 25
Kansas	2,321	1,469,969	1: 632	2,070	1,874,000	1: 906	— 43
Kentucky	3,761	2,230,619	1: 592	1,893	2,903,000	1:1532	—159
Louisiana	1,551	1,400,237	1: 942	2,464	2,127,000	1: 863	+ 8
Maine	1,116	702,875	1: 630	992	855,000	1: 862	— 37
Maryland	1,810	1,231,739	1: 681	2,988	1,677,000	1: 559	+ 18
Massachusetts	5,372	2,974,031	1: 552	7,889	4,425,000	1: 561	— 2
Michigan	4,096	2,510,647	1: 616	6,362	4,808,000	1: 756	— 23
Minnesota	1,946	1,857,462	1: 953	3,527	2,644,000	1: 750	+ 21
Mississippi	1,760	1,629,771	1: 926	1,497	2,016,000	1:1346	— 46
Missouri	5,956	3,227,214	1: 542	5,297	3,975,000	1: 750	— 38
Montana	335	277,102	1: 830	537	535,000	1: 997	— 20
Nebraska	1,668	1,098,139	1: 658	1,635	1,364,000	1: 835	— 27
Nevada	138	40,829	1: 296	167	101,000	1: 604	—104
New Hampshire	646	422,109	1: 653	656	509,000	1: 775	— 19
New Jersey	2,332	2,016,797	1: 865	5,813	4,336,000	1: 747	+ 14
New Mexico	221	205,819	1: 931	439	422,000	1: 961	— 3
New York	11,982	7,659,784	1: 639	27,396	12,948,000	1: 473	+ 26
North Carolina	1,453	1,976,541	1:1360	2,740	3,476,000	1:1269	+ 8
North Dakota	451	357,594	1: 793	518	705,000	1:1360	— 72
Ohio	7,710	4,302,860	1: 558	9,318	6,724,000	1: 723	— 30
Oklahoma	1,869	950,908	1: 509	2,352	2,539,000	1:1079	—112
Oregon	696	464,685	1: 669	1,461	1,022,000	1: 700	— 5
Pennsylvania	9,957	6,606,747	1: 663	13,529	10,158,000	1: 750	— 13
Rhode Island	727	480,082	1: 660	961	681,000	1: 709	— 8
South Carolina	1,023	1,397,067	1:1364	1,402	1,868,000	1:1331	+ 2
South Dakota	545	443,927	1: 815	508	692,000	1:1360	— 67
Tennessee	2,980	2,095,223	1: 703	2,908	2,880,000	1: 992	— 41
Texas	4,825	3,285,474	1: 678	6,898	6,147,000	1: 890	— 32
Utah	304	295,404	1: 970	575	518,000	1: 901	+ 7
Vermont	646	347,007	1: 537	523	382,000	1: 730	— 36
Virginia	1,945	1,919,103	1: 985	2,880	2,690,000	1: 931	+ 6
Washington	1,023	870,510	1: 850	2,200	1,651,000	1: 750	+ 12
West Virginia	1,409	1,021,106	1: 725	1,834	1,849,000	1:1008	— 39
Wisconsin	2,430	2,155,441	1: 887	3,523	2,918,000	1: 828	+ 7
Wyoming	174	101,525	1: 584	274	234,000	1: 855	— 46

* Compiled from data published in the Directories of the American Medical Association, 1906 and 1940.
† Estimated 1903 Census.
‡ Estimated 1937 Census.

then the unselected millions who used to pour into our country from every section of Europe? They should be more so, for they come with professional equipment at a time when every agency of government is clamoring for the very services they can render. Many have come to us after years of successful urban practice or institutional service; some are experienced specialists; the wisest of them are settling into the simple routine of the country practitioner; these are very humble and very grateful.

In line with the committee's policy, the experimental program which is operating in Virginia this year provides an example of carefully planned resettlement. In that state some candidates sponsored by the national committee after previous examination by its New York division and the Virginia committee are being permitted to take the medical examinations by special agreement with the Virginia Board of Medical Examiners. The number of rural communities short of physicians determine the number admitted to the examination, and successful candidates are being resettled in the chosen communities.

This committee is not unaware of its limitations. It is not a legal agency and its service is advisory. It realizes that in large groups of émigré physicians there would be unfit as well as qualified persons and within the limits of its capacity it has endeavored to exclude those proved to be incapable. Among the reasons for exclusion are the handicap of advanced age, the limitation of opportunity for certain specialists, inferior ability as indicated in failure in examinations, inadequate medical training, language difficulty, serious physical handicaps, mental difficulties or failure to cooperate with the committee's program. In the period from July 1, 1940 to Aug. 1, 1941 more than one hundred and eighty physicians have been taken off our rolls for various reasons and advised to find other occupation. Wherever possible, retraining in some other field was offered through cooperating agencies.

INADEQUATE NUMBER OF PHYSICIANS

There is developing out of the present national emergency an increasingly acute need for physicians. The Office of Production Management and other federal agencies, for example, estimate that within the next six months or a year there will be a 10 per cent decrease in the number of physicians available for civil wants. The possibility of using qualified émigrés has been recognized by the House of Delegates of the American Medical Association, which recently recommended that its Committee on Medical Preparedness seek to work out a plan to utilize the services of foreign physicians wherever they are needed.

The needs of the Army and Navy are so great that some agencies have urged medical schools to increase their enrolment for next year. The noncitizen émigré is not eligible for military service as a commissioned officer in the Medical Corps, but some have been drafted and are serving with the armed forces. The shortage of physicians is obviously becoming more acute as the Army and Navy call up more men. At the same time the requirements of defense production centers have increased as population shifts have taken place to meet the increased demand for labor.

Recently it was announced that the British government requires about one thousand physicians for civilian and military purposes. Although many émigré doctors volunteered, they could not be accepted because they were not American citizens and were not acceptable to the British government. The same limitations bar their use in the American Red Cross.

PRESENT NEEDS

Apart from the immediately emergent situation there is an older problem. In its efforts to resettle émigrés the committee has sought out the communities where physicians were needed. Its field secretaries in contact with state boards, hospitals and public health agencies have located many places eager to employ any qualified physician in rural communities.

While the general population of the United States has increased, the medical census has not kept pace. Taken by states, there have been some remarkable changes in the past thirty-five years, as indicated in table 6, comparing the individual states as to population and the number of physicians in each as cited in the American Medical Directory in 1906 and 1940 (table 6). Although the population has increased in every state, the number of physicians has fallen in thirteen—in some as much as 30 to 50 per cent.

The committee knows no standard of reference to determine the ideal ratio of physicians to the population. Variables such as area, population, density, per capita income and professional and cultural advantages all play a role.

However, it is obvious that there are many states with too few physicians for their population. In eighteen the ratios range from 1 physician to 901 persons to 1 physician to 1,532 persons. These states include the ones which have had the greatest decreases in the ratio of physicians to population during the past thirty-five years. Only four of these states have had an increase in the number of physicians in relation to the population (South Carolina, North Carolina, Utah and Virgina) but this has been less than 10 per cent in each. These are largely rural communities where medical service is time consuming and costly (charges are often made for mileage involved in each call). Of necessity, medical service is relatively inaccessible. Yet, despite the obvious need, only Virginia and Tennessee have not restricted the settlement of qualified physicians who have been educated abroad. This applies alike to citizens or bona fide immigrants with first papers. In addition to these eighteen states, sixteen others have steadily suffered decreases in the relative proportions of physicians to the general population.

The steady shift in the location of young American graduates from rural to urban areas was shown by Mayer and Harrison [3] in their study of the distribution of physicians in the United States. In 1906, 29.4 per cent of the graduates of 1901-1905 had established themselves in cities with populations over 100,000. In 1923, 51.7 per cent of all those who had been graduated between 1916 and 1920 settled in such localities. And the general proportion of physicians in cities over 100,000 increased from 37.9 per cent in 1923 to 46.2 per cent in 1931. Despite the fact that nearly half of the United States population lives in communities with a population of 5,000 or less, the flow of physicians into cities was such that in 1931 less than 20 per cent of the 1920-1925 graduates settled in such places.

In the territories under the jurisdiction of the federal government, the shortage of physicians is acute. Puerto Rico and Alaska both contain a fairly large population of persons who are wards of the government. In the Indian territories the Medical Service has been understaffed for years while the Indian population has been growing at the highest birth rate registered anywhere in this country. The Department of the Interior has recognized this problem and as an experiment this year it has accepted seven carefully selected émigrés as volunteer assistants in hospitals in the Indian territories. If this experiment works successfully and men are available, it may be extended in the future.

3. Mayer, L., and Harrison, L. V.: Distribution of Physicians in the United States, New York, General Education Board, 1924.

ÉMIGRÉ RESTRICTIONS

There is no doubt, therefore, that we are facing an increasing shortage of native physicians. Despite this and despite the unquestioned ability of most refugee physicians to fill it, there is a complex network of legal or semilegal restrictions which stands in the way. Unfortunately, discrimination against the licensure of legally admitted émigrés has increased in many states during the two and a half years of the committee's operation. This discrimination had contributed directly to their congregation in New York, in Boston and to a lesser degree in Chicago, San Francisco and Los Angeles—communities where they have had some chance to do useful medical work and maintain some kind of professional status.

Four types of rulings, or legislations, serve to bar émigré physicians from pursuing their professional careers, even though they are in the process of becoming citizens. These are:

1. The statutory law, or administrative ruling by the state licensing boards, requiring citizenship before admission to a licensing examination.

2. State board rulings which exclude graduates of foreign schools on the ground that there is insufficient information concerning the mode of education and quality of instruction in those schools.

3. A law recently passed in California which denies licensure to all graduates of foreign schools unless the country in which the school is located engages in international reciprocity with American licentiates.

4. The restriction (usually by state board ruling) requiring graduation from an approved American school before admission to the state licensing examination.

Certainly the ultimate attainment of citizenship is highly desirable, but no law or administrative requirement should work to the detriment of the prospective citizen or the community. It is short sighted to retard assimilation and Americanization by barring an otherwise bona fide immigrant from the pursuit of his professional career for five years. The result is liable to be deterioration as a doctor through nonpractice and loss of morale. The New York State law (adopted by a few states) which requires first papers before licensure, and revocation of the license if full citizenship is not obtained within ten years of its issuance, is a model which all the other states might well follow.

Because of new efforts to bar alien physicians by requiring full citizenship, let us consider the validity of some of the arguments for such restriction. One is that, since a practicing physician has as his responsibility the life and well-being of his patient, such a calling with its high degree of personal responsibility should not be entrusted to an alien. Another is that an alien physician might be more likely to perform illegal operations than a citizen physician. Some also argue that, since a physician prescribes narcotics and may be called on to assist in the administration of public health and quarantine law, some activities in the practice of the profession approximate the holding of public office. This thinking confuses administration of law with observance of its provisions. The physician, unless he is appointed as a quarantine officer, has no police authority over enforcement of public health laws. His duty is simply to obey their provisions after he has been instructed in them. If an alien physician is in the process of becoming a citizen there can be no doubt of his personal or civic responsibility.

Many states permit licensure for physicians who have declared their intention to become citizens. The United States Supreme Court has pointed out [4] that "the rights, privileges, and duties of alien declarants . . . differ substantially from those of nondeclarants." These distinctions are even more apparent in the case of the political or religious refugee who, because of legislation in his native country, has become "stateless."

The notion that the alien physician has any other allegiance that may influence his observations of law has no basis. Under existing statutes [5] he is now equally liable to regular military duty as any native or naturalized citizen. That he cannot be used in the Medical Corps is surely no fault of his own. In the committee's experience, most émigré physicians would be glad to serve in that way, and the Army or Navy could use their services. They might profit from the special knowledge of those experienced in German or other European military medical methods. In other words, the immigrant doctor, obeying the law, is prevented by that very law from playing his full part in national defense. The obvious conclusion here is that some way ought to be worked out which will allow him to do so.

The United States Supreme Court has recorded [6] a principle for all law makers to remember:

> The courts are not bound by mere forms, nor are they to be misled by mere pretenses. They are at liberty—indeed, are under a solemn duty—to look at the substance of things, whenever they enter upon the inquiry whether the legislature has transcended the limits of its authority. If, therefore, a statute purporting to have been enacted to protect the public health, the public morals or the public safety has no real or substantial relation to those objects, or it is a palpable invasion of rights secured by the fundamental law, it is the duty of the courts to so adjudge, and thereby give effect to the Constitution.

In a stirring message, Governor Dwight Green has recently vetoed a series of bills sponsored in Illinois which would have required citizenship for licensure in medicine and other professions. The Attorney General [7] also ruled that the bills were unconstitutional and violated the fourteenth amendment to the United States Constitution. For a complete statement of the case against such laws, Governor Green's message can be quoted:

> The Illinois laws and regulations concerning regulation for and practice of medicine exact high qualifications from those who seek their privilege, and those who enforce these regulations are fully competent to determine the attainments of every applicant.
>
> If there are those who are unqualified to practice medicine, this is determined as it would be in the case of any citizen applicant. When those who apply are found qualified, however, we are given the advantage of their skill and this advantage is gained at a time when national preparedness through the induction of great numbers of men in our professions has depleted the number of those available for home service.
>
> In more than half the world, the forces of oppression and totalitarianism are at war to destroy the principles of free democracy. This nation still stands forth as the one in which the rights of the individual to sustain himself by his own efforts are guaranteed. I do not believe that this is the time at which to weaken, or withdraw, that guaranty of freedom and opportunity.
>
> Many unfortunate but meritorious people have been driven from their homes and places of employment to seek such freedom as is granted under our constitutional form of government. Many of them are persons of high professional attainment. There is little likelihood that any of them would become a charge upon the state. The State Department of Registration and Education estimates that there are now two hundred and twenty-eight applications by aliens pending for licenses in various occupations and professions and of this number one hundred are from physicians.
>
> Neither is there a probability that they would not welcome the opportunity, as soon as it was legally available, to become naturalized citizens of the country in which they have sought the right of liberty.
>
> A great many American born men and women who stand highest in our professional and business life are directly descended from those of alien birth who similarly sought liberty and safety in this country generations ago. Had our states, or national government, denied freedom of opportunity to them, this nation would have been deprived of many of its worthiest citizens of today.
>
> It is in a time such as this that official and personal relations should be conducted upon the most liberal interpretation of liberty.

There is another type of restrictive action based on the allegation that there is insufficient information to determine the reputability and good standing of medical schools in foreign countries. Resolutions along these lines have been introduced within a few months of each other in the Illinois Medical Society [8] and the New York State Medical Society [9] using virtually the same language. They recommend that recognition for medical licensure in the respective state, whether after examination or otherwise, and irrespective of the question of citizenship of all graduates of medical schools located in the United States and Canada. Any other method of recognition is held as constituting the grossest type of discrimination in favor of foreign graduates. In New York this resolution, if made effective, would apply to candidates in the future. In Illinois the resolution went further and required that the inspection of the foreign schools be made expressly at the invitation of those schools and that the cost of the inspection should be defrayed by the foreign schools. Obviously, the latter requirement would seldom, if ever, be met by the Nazi rulers now in control of Europe's universities. These resolutions make no reference to the quality of instruction in any of the foreign schools, thus lumping together universities like Cambridge, Oxford, University College of London and the Universities of Munich, Freiburg and Berlin with less reputable schools.

An editorial in the *Connecticut State Medical Journal* [10] says of this resolution:

> The Illinois State Medical Society, while it admits the physical impossibility of determining the standard of foreign medical schools, requires that the admittedly impossible be done before graduates of foreign schools be admitted to practice. It would appear to us that this imposes an undue hardship on many reputable and desirable doctors who have trained in foreign schools. As long as it is so difficult to appraise foreign schools it would seem that the fair thing to do at this time would be to lay the stress of admission on the examination of the candidate both as to character and professional ability. Insistence that the candidate be a citizen of the United States, a matter previously discussed in this journal, while perhaps something of a hardship because of the residency

4. Porterfield v. Webb, 263 U. S. 225; Webb v. O'Brien, U. S. 313; Frick v. Webb, 263 U. S. 326.
5. Terrace v. Thompson, 263 U. S. 197; 218 Act of Aug. 31, 1918, chapter 166; 40 Stat. 76, 884, 955.
6. Mugler v. Kansas, 123 U. S. 623, p. 661.
7. The attorney generals of South Dakota in 1926, of Texas in 1939 and of Utah in 1939 also held such legislation to be unconstitutional.
8. Illinois Bans Graduates From Foreign Medical Schools, editorial, Illinois M. J. **79**: 272 (April) 1941.
9. Report of Reference Committee on New Business B Licensure—Standards For Recognition of Foreign Medical Schools, Minutes of the Annual Meeting of the House of Delegates, New York State Medical Society, New York State J. Med. **41**: 1381 (July 1) 1941.
10. The Foreign Graduate, editorial, Connecticut M. J. **5**: 441 (June) 1941.

requirements, seems entirely justified. Interference with the right of a citizen of the United States to practice his chosen profession because he trained in a foreign school would seem both unjustified and unfair.

The deterioration of the continental schools that have come under the Nazi régime justifies barring graduates from such schools after the change, but no one can justify a retroactive ruling which would bar graduates of the leading European schools of earlier years. These resolutions ignore the realities concerning the good foreign schools of the past forty years.

As recently as in 1929 the Council on Medical Education and Hospitals of the American Medical Association stated:[11]

> With the requirements of two or more years of premedical study, medical education in the United States is now on a par with the requirements in other countries.

Continuing, the report pointed out that there are three hundred and twenty-one bona fide medical schools in all countries outside the United States, giving a complete list of the schools.

Furthermore, lists of acceptable foreign schools have been compiled by the Royal Society of Great Britain and are used by the National Board of Medical Examiners. Graduates of inferior schools are already barred from taking the examinations of the National Board of Medical Examiners, whose high standards have won reciprocity for their diplomates in more than forty states in this country.

A bill was recently passed in California which would deny the license even to a California native son who happens to be a graduate of a foreign school, unless the country in which the school is located extends reciprocity to Americans. This would bar the foreign educated competent citizen physician, native or foreign born, from California forever. This is indeed chauvinistic legislation of the most deplorable type. How it can be construed to be in the interests of the public welfare is difficult to see.

A further barrier to the equitable distribution of qualified refugees has been created by licensing boards which have withdrawn reciprocity from those states in which émigrés have been admitted to licensure. This certainly cannot be justified in the light of admittedly increasing needs.

In a class with restrictive rulings directed toward applicants for licenses is the deplorable effort in some county medical societies to deny admission to membership of foreign physicians who are licensed. Some have required citizenship; others have ruled that applicants be graduates of class A American schools. Membership in the county society is often necessary for hospital practice and is considered the natural prerequisite to good standing in the medical fraternity. These requirements are degrading to the licensed émigré with first papers who is doing his best to become a reputable member of the whole community. The only reason behind such rulings must be fear of competition or rank prejudice.

Sickness knows no citizenship, and our profession must always stand for a liberal and reasonable policy. We must strive to maintain high tradition which our world has inherited from the past. We know that the basis of all progress in science and learning is through international cooperation. In no other form of human activity has there been so complete an internationalism as in medical science. If this is true in the scientific realm it should be no less true in the application of the science to the needs of the sick. The tools we use bear the names of every nation and race.

11. Report of the Council on Medical Education, J. A. M. A. **93:** 544 (Aug. 17) 1929.

RECOMMENDATIONS

All the new needs for physicians certainly should provide the avenue to a solution of the problems created by the concentration of foreign physicians in New York and in a few other cities. A constructive attitude on the part of organized medicine and a comprehensive resettlement program would greatly serve the public interest.

Many state licensing boards have the power to issue licenses of a temporary or a limited nature. Citizenship at the earliest possible moment may be made a condition of such a license. Some states may even define the areas of practice in which the license may be used. Such regional licenses with proper clauses for revocation should satisfy any skeptic by giving the émigré physicians the test of assimilability and fitness.

By cooperation with the United States Public Health Service and local state agencies, employment of qualified foreign physicians could be arranged in medically needy areas developing out of the national defense program.[12]

The *New York Medical Week* [13] and the president [14] of the Medical Society of the State of New York have both pleaded for the use of loyal refugees in the defense program. The *Medical Week* comments too:

> At the present time there are over 2,500 medical refugees located in this state. They have the qualifications, and many have the desire, to make valuable contribution to the defense program.
>
> So far the government has refused to accept the services of these men. If this policy is continued, we will see the native American physician who serves his country, as all good citizens should, losing his practice to foreign colleagues who are refused the opportunity of similar service. The utilization of loyal refugees in the defense program would help to protect native Americans against permanent loss of their practices as a result of military service. It would also facilitate the assimilation of refugee physicians into American life and give spiritual as well as legal validity to their applications for citizenship.

There is no doubt that some kind of internship training in an American hospital is desirable before licensure of all young men, but justice and wisdom dictate that, in the case of men of middle age and over who have had abundant clinical experience, such a requirement is

12. In reply to an inquiry pertaining to the incorporation of alien physicians into the British defense program, the following communication was received from the British Library of Information in New York City: "The position briefly is as follows: For the first sixteen months of the war, though there was considerable pressure on the government from some quarters to admit alien doctors to work in hospitals or in some form of the national medical services, few were actually employed. One reason was that there was a general ban on doctors or medical students of enemy alien origin entering any hospital which gave treatment or was available for treatment to any members of His Majesty's Forces, and it was not until August 1940 that this ban was removed. During the autumn of 1940 an acute shortage of doctors developed, and a number of members of Parliament pressed for permission to be granted to all adequately qualified doctors to practice, whether they had British qualifications or not. In January 1941, under the Medical Practitioner's (Temporary Registration) Order, 1941, it was provided that alien doctors with foreign qualifications might be admitted temporarily to the Medical Register. Since that time, applications from alien doctors are considered by the Central Medical War Committee, and, when approved, submitted for scrutiny to the security authorities. Doctors of enemy alien nationality are recommended for employment mainly in hospitals and institutions. On the 12th June 1941 it was stated in the House of Commons, that, apart from those alien doctors commissioned in British or Allied forces, two hundred and eighty-nine alien doctors had been registered under the Medical (Temporary Registrations) Order, and cases were examined at the rate of 80 a week."

13. Editorial, New York M. Week **20:** 4 (Aug. 30) 1941.

14. Kopetsky, S. J.: The Role of the Doctor in the Defense Program, New York State J. Med. **41:** 1487 (July) 1941.

not necessary. If the present demands for interns continue, it will be necessary for hospitals to accept much older men than in the past years. Until the present national crisis the committee was able to place only émigrés under 35, but in recent months hospitals have been willing to take men as old as 45 to 48.

There are at least fifteen hundred unplaced physicians who are available to meet increased needs. Many licensed émigrés now forced to practice in cities would grasp the opportunities available in the rural states. Most of them have little or no reserve resources and have eagerly sought any professional opportunities. In view of the success achieved with rural placements, more rural states should be urged to take a limited number each year.

State licensing boards now unable to evaluate European schools should apply the standards of the National Board of Medical Examiners. If this is insufficient they should require that applicants from foreign medical schools pass the examination of the National Board of Medical Examiners. Moreover, a committee should be set up with representatives of the state board of medical examiners, the Council on Medical Education and Hospitals of the American Medical Association and the National Board of Medical Examiners, which could prepare an up to date list of bona fide medical schools, giving the years of graduation which would be acceptable for admission to examination.

SUMMARY AND CONCLUSIONS

1. The National Committee for Resettlement of Foreign Physicians has succeeded in assisting and placing between twelve and fifteen hundred émigrés in internship or practice during the two and a half years of its existence; no serious complaints or maladjustments have occurred among 95 to 98 per cent of such placements.

2. Rural resettlement has been particularly successful in the few states still open to émigrés.

3. Because of increasing natural needs (especially in rural states) and the special needs arising from the present national emergency, ample opportunities exist to employ the unlicensed recent émigrés.

4. Cooperative action by all medical agencies, federal and state, together with the American Medical Association, could provide a plan to redistribute and resettle the qualified émigré physicians.

5. Tests for qualification in the form of state board or national board examination should be applied to all.

6. Younger émigrés (under 40) should be required to take internships before licensure.

7. All licenses should stipulate that the émigré applicant shall have first papers to obtain citizenship as soon as the law permits.

8. Temporary licenses with similar safeguards should be issued after successful examination, for use in selected areas through state licensing boards. Supervisory agencies of the state and the state medical societies should be available to check the work of the temporary licensees.

9. Proper resettlement of the qualified émigrés and the acceptance of some for Army and Navy needs will protect native Americans against permanent loss of their practices, if called to military service. Such action will also avoid overcrowding and undue competition in many cities and will contribute to the medical care of the nation as a whole.

Council on Physical Therapy

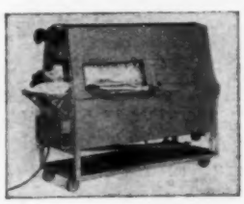
THE COUNCIL ON PHYSICAL THERAPY HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT. HOWARD A. CARTER, Secretary.

EMERSON FEVER CABINET ACCEPTABLE

Manufacturer: J. H. Emerson Company, 22 Cottage Park Avenue, Cambridge, Mass.

The Emerson Fever Cabinet provides a means of producing and maintaining artificial fever. The manufacturer states that while the apparatus is in operation a thermostatically controlled atmosphere is supplied to the chamber in which the patient lies and that 100 per cent humidity may be produced at any temperature, making it possible for a lower cabinet temperature to be used in producing the fever. It is also stated that as far as possible the movement of air in the cabinet has been eliminated, since such movement is a factor in heat loss.

The apparatus is portable and is protected electrically by a 30 ampere fuse. The cabinet is hinged at the foot end; this arrangement is said by the manufacturer to effect an economy in room space and to facilitate moving the patient in or out of the cabinet. When closed, the cabinet may be locked securely. Two hinged doors located on each side of the cabinet make possible nursing care and the administration of intravenous solutions. The doors serve as shelves when lowered and are curtained to prevent in part the escape of the heated moist air. Electric control switches are located under the head rest out of the patient's view, and two air blowers at the head of the cabinet may be directed to blow on the patient's face. The interior of the cabinet is of stainless steel construction for ease in cleaning.



Emerson Fever Cabinet.

All walls of the cabinet are insulated to conserve heat. A large reservoir of water is located in the lower half of the unit, and humidifiers which dip into the reservoir are used to force moist heated air into the upper cabinet during the induction of fever. The reservoir is limited to 150 degrees maximum water heat, and this temperature may be held at the desired level by the adjustment of the thermostat. A rectal thermometer remains in place during the treatment and indicates the patient's temperature at all times.

As evidence of the efficacy of the apparatus the firm asserts:

> Maintenance of fever is carried out with a minimum of air movement (the only movement of air in the cabinet when the doors are kept closed is the convection currents of heat rising in a closed chamber). This is important, as air movement over the surface of the body is one of the greatest factors effecting heat loss. In most cases fever is maintained with a temperature but a few degrees higher than the desired temperature of the patient. As the temperature at the very top (the hottest point in the cabinet) cannot exceed 116 to 124 F., there is a minimal danger of burning patients.
>
> This cabinet and the previous model have been used for two years with satisfaction. The average induction time does not exceed that of other hyperthermia cabinets in general; average period of elevation to 104 F. has been about sixty-five minutes, and to 107 F. two hours. This is the usual time which is provided for the induction of fever.
>
> Patients have been treated for ten hours at peak temperatures of 106.8 F. and all other prescriptions required in fever therapy. By the simple maneuver of jacking up the bottom of the cabinet it is possible, through the shock position, to continue the patient's fever therapy when, under ordinary conditions due to fall of blood pressure, it would have otherwise been deemed inadvisable.
>
> The advantage in this unit is economy in maintaining temperature and the comfort which the patient has during the maintenance period. It takes little heat to keep the patient's chamber balanced at the proper point to hold the patient at the desired level. Very flat plateaus of temperature are obtainable.

In the Council's investigation of the Emerson Fever Cabinet, the apparatus was used in a large fever therapy department and was found to be satisfactory both in raising the bodily temperature of patients and with respect to the patient's comfort. It was possible to produce a high humidity in the cabinet. There was little or no motion of air, and the patients were comfortable during treatment.

The Council voted to accept the Emerson Fever Cabinet for inclusion on its list of accepted devices.

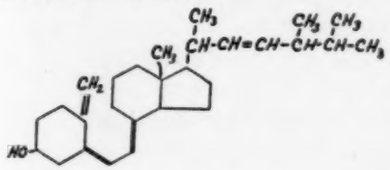
Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

THEODORE G. KLUMPP, M.D., Secretary.

DRISDOL.—Vitamin D_2.— 9 || 10 Ergostatetraene (18:10, 5:6, 7:8, 22:23)-ol-3. $-C_{28}H_{44}O$



Vitamin D_2 may be prepared by ultraviolet irradiation of ergosterol in a suitable solvent or by electronic bombardment of the compound: it is not identical with the vitamin D which predominates in fish liver oils and which is called vitamin D_3. A method of preparation of vitamin D_2 is given in Addendum 1936 to the British Pharmacopeia, 1932, page 20. The crystals have a potency of 40 units of vitamin D (U. S. P.) per microgram. (For methods of assay see U. S. P. XI, Second Supplement, page 136.)

Actions and Uses.—Drisdol is used as an antirachitic. For allowable claims, see under allowable claims for vitamin D.

Dosage.—Drisdol is administered as drisdol in propylene glycol. Average daily dose: 2 drops dissolved in total ration of modified or whole milk. If administered in water, gruel, etc., 4 drops daily for the average infant, and up to 15 drops daily for the premature or rapidly growing infant. Daily curative dose: 15 to 20 drops. The product is marketed with a special dropper delivering 250 U. S. P. units of vitamin D per drop.

Manufactured by the Winthrop Chemical Company, Inc., New York. U. S. patent 1,902,785, (expires March 21, 1950) and 2,030,792 (expires Feb. 11, 1953) U. S. Trademark 333,661.

Drisdol in Propylene Glycol, 5 cc. Bottles: Contains approximately 0.25 mg. of drisdol in each cubic centimeter of propylene glycol solution and has a potency of 10,000 units of vitamin D (U. S. P.) per gram. The propylene glycol used in the preparation of this product complies with the standards for propylene glycol-N. N. R.

Drisdol in Propylene Glycol, 50 cc. Bottles: Contains approximately 0.25 mg. of drisdol in each cubic centimeter of propylene glycol solution and has a potency of 10,000 units of vitamin D (U. S. P.) per gram. The propylene glycol used in the preparation of this product complies with the standards for propylene glycol-N. N. R.

Drisdol occurs as a colorless, odorless, acicular, crystalline substance. It is insoluble in water; soluble in alcohol, ether, chloroform, acetone, ethylene glycol and propylene glycol; sparingly soluble in vegetable oils. The melting point of drisdol lies between 115 and 118 C. Solutions of drisdol possess an absorption maximum at 2,640 angstroms.

Dissolve approximately 0.5 mg. of drisdol in 5 cc. of chloroform, add 3 drops of acetic anhydride and 3 drops of sulfuric acid and shake the mixture; a bright red color develops which rapidly changes to violet, blue and finally to green.

Dissolve 0.05 Gm. of drisdol and 0.05 Gm. of 3,5 *di*nitrobenzoyl chloride in separate 1 cc. portions of anhydrous pyridine. Mix the solution and warm the mixture on the water bath for ten minutes: add 5 cc. of water, filter and wash the precipitate repeatedly with small amounts of cold water. Recrystallize the precipitated *di*nitrobenzoyl derivative twice from acetone and finally dry it in a desiccator under partial vacuum: the melting point of the product is from 147 to 149 C.

The specific rotation $[a]\frac{25}{D}$ of the drisdol *di*nitrobenzoate dissolved in acetone + 80 degrees.

Dissolve approximately 0.01 Gm. of drisdol in 1 cc. of alcohol and add 1 cc. of a 1 per cent solution of digitonin in 90 per cent alcohol; allow the mixture to stand for twelve hours: no precipitate occurs *(absence of ergosterol).*

Dissolve approximately 0.03 Gm. of drisdol, accurately weighed, in 1 cc. of acetone at 25 C. Polarize the solution in a 0.5 decimeter tube at 25 C. using sodium light: the specific rotation lies between + 79.5 and + 83.5 degrees. Determine the amount of carbon and hydrogen present in drisdol by burning the substance in an appropriate combustion train; the carbon content should not be less than 84.6 per cent nor more than 85.1 per cent; the hydrogen content should not be less than 10.9 per cent nor more than 11.3 per cent.

NOVOCAIN (See New and Nonofficial Remedies, 1941, p. 81).

The following dosage form has been accepted:

Novocain-Suprarenin Solution 1 Per Cent: Each cubic centimeter contains procaine hydrochloride 0.01 Gm., epinephrine bitartrate 0.00001 Gm., sodium chloride 0.004 Gm., potassium sulfate 0.004 Gm. Marketed in 30 cc. rubber diaphragm-capped bottles accompanied by an air vent filter needle.

SULFAPYRIDINE (See New and Nonofficial Remedies, 1941, p. 511).

The following dosage form has been accepted:

Tablets Sulfapyridine 0.065 Gm. (1 grain).

Prepared by Eli Lilly & Co., Indianapolis. No U. S. patent or trademark.

SULFATHIAZOLE (See New and Nonofficial Remedies, 1941, p. 514).

Sulfathiazole-Endo.—A brand of sulfathiazole-N. N. R.

Manufactured by Endo Products, Inc., Richmond Hill, N. Y. No U. S. patent or trademark.

Tablets Sulfathiazole-Endo, 0.5 Gm. (7.7 grains).

Sulfathiazole-Smith-Dorsey. —A brand of sulfathiazole-N. N. R.

Manufactured by The Smith-Dorsey Co., Lincoln, Neb. No U. S. patent or trademark.

Tablets Sulfathiazole, 0.5 Gm. (7.5 grains).

Sulfathiazole-Lilly (See THE JOURNAL, Aug. 30, 1941, p. 680).

The following dosage form has been accepted:

Tablets Sulfathiazole-Lilly, 0.065 Gm. (1 grain).

Sulfathiazole-Upjohn (See THE JOURNAL, Sept. 20, 1941, p. 1017).

The following dosage form has been accepted:

Tablets Sulfathiazole-Upjohn, 0.25 Gm. (3.85 grains).

SODIUM *r*-LACTATE ONE-SIXTH MOLAR (See THE JOURNAL, Oct. 25, 1941, p. 1445).

One-Sixth Molar Sodium *r*-Lactate Solution.—A brand of sodium *r*-lactate one-sixth molar-N. N. R.

Manufactured by Baxter Laboratories, Inc., Glenview, Ill., and Don Baxter, Inc., Glendale, Calif. (American Hospital Supply Corporation, Chicago, eastern distributor.) No U. S. patent or trademark.

One-Sixth Molar Sodium r-Lactate Solution in Vacoliter Containers: Each 100 cc. contains sodium *r*-lactate 1.87 Gm. in sterile distilled water. Also marketed in half-size vacoliter containers.

Council on Foods and Nutrition

ACCEPTED FOODS

THE FOLLOWING ADDITIONAL FOODS HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO ACCEPTED FOODS.

FRANKLIN C. BING, Secretary.

FATS AND OILS (*See* Accepted Foods, 1939, p. 30).

Interstate Cotton Oil Refining Company, Sherman, Texas.

MRS. TUCKER'S SHORTENING, hydrogenated cottonseed and soya bean oil with added lecithin.

Analysis (submitted by manufacturer).—Moisture, 0.05%, total solids (fat) 99.95%, fatty acids trace, iodine number 80 to 90, melting point 114 F., saponification value 192.

Calories.—9 per gram; 255 per ounce.

FRUIT JUICES INCLUDING TOMATO JUICE (*See* Accepted Foods, 1939, p. 48).

Sunshine Foods, Inc., Lakeland, Fla. (plant at Winter Haven, Fla.), a subsidiary of Pomona Products Company, Griffin, Ga.

SUNSHINE BRAND ORANGE JUICE.

Analysis (submitted by manufacturer).—Moisture 89.5%, total solids 10.5%, ash 0.4%, fat (ether extract) 0.1%, protein (N × 6.25) 0.5%, crude fiber 0.01%, carbohydrates other than crude fiber (by difference) 9.4%, acidity as citric acid 0.7%, peel oil 0.008%, *pH* 3.80.

The firm reports that the product contains from 31.2 to 46 mg. per hundred cubic centimeters (624 to 920 international units per hundred cubic centimeters) as determined by the dye method and by iodine titration.

Calories.—0.41 per gram; 12 per ounce.

MILK AND MILK PRODUCTS (*See* Accepted Foods, 1939, p. 230).

Minnesota Evaporated Milk Company, Winona, Minn.

GOLDEN GLOW BRAND EVAPORATED MILK.

Analysis (submitted by manufacturer).—Moisture 73.0%, total solids 27.0%, ash 1.5%, fat (ether extract) 7.9%, protein (N × 6.38) 6.4%, lactose (by difference) 11.2%.

Calories.—1.4 per gram; 39.8 per ounce.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, NOVEMBER 29, 1941

"PLAIN WORDS ABOUT VENEREAL DISEASE"

On Sunday morning November 16, newspapers which subscribe to the North American Newspaper Alliance published a copyrighted article written by Paul de Kruif heralding a forthcoming book by Drs. Thomas Parran and R. A. Vonderlehr entitled "Plain Words About Venereal Disease." De Kruif said that in their new book these authors "tell the story of how between one and two million of our young men, who were brought—free of venereal disease!—into the new army, are now being needlessly exposed to time-wasting gonorrhea and life-endangering syphilis, because the War Department and municipal authorities have seemed not to think it important to apply the powerful preventive measures that Secretary of War Newton D. Baker and Gen. John J. Pershing used—with brilliant success—in World War I, twenty-four years ago." After reviewing the campaign against venereal disease waged by Dr. Parran since he became Surgeon General, de Kruif points out that those rejected by the Army because of venereal disease are thrown back into civilian life and are not the army's business. And he proceeds "But it was definitely the army's business to see to it that its now more than a million of young men, all of them, venereally speaking, clean as a hound's tooth, should be kept that way." He points out that venereal disease rates fell in the Army at first because of the dilution brought about by a great increment of men free from venereal disease. However, he proceeds "Now, as of June 1941, the gonorrhea rate has shot up from 27.7 to 40.3. And the syphilis rate is rapidly climbing back up to the premobilization rate. . . . This can lead us to one terrible conclusion: that scores of thousands of soldiers are now being infected in the vice dives around the Army camps." In contrast to this statement of de Kruif, presumably based on the book, a release by the War Department, November 14, states that "In 1917, the annual rate for all venereal diseases was 107 in 1,000 soldiers. In 1918 it was 90 per 1,000. The present annual rate approximates 40 per 1,000. The annual rate for syphilis in the Army was 17.56 per 1,000 in 1918. This rate dropped progressively to 6.59 in 1939, 5.7 in 1940 and in August 1941 it dropped to 5.5." Moreover, a statement made by Mark S. Watson in the Baltimore *Sun*, November 16, says "The de Kruif statement that the gonorrhea rate alone had soared from 27 to 40 per thousand is not supported by the figures so far studied in the Medical Corps' detailed report." Perhaps these discrepancies in figures are explainable. The Army Medical Department may well resent charges based on exaggerations. There seems to be every reason to believe that the venereal disease incidence in the Army is steadily declining. That, however, is not the main issue raised by the Parran-Vonderlehr book.

The chief issues raised by the de Kruif advance publicity and by this book itself is the charge that the Secretary of War has been lax. To quote the book itself (p. 81):

> Infections do not occur in the camps. The source of all venereal infection lies in the civilian population. It follows that the protection of soldiers, sailors and defense workers from syphilis and gonorrhea is a civilian responsibility. It is a responsibility which civilians could be organized to carry with less difficulty if the Secretary of War would take a leaf from the book of Secretary of War Newton D. Baker.

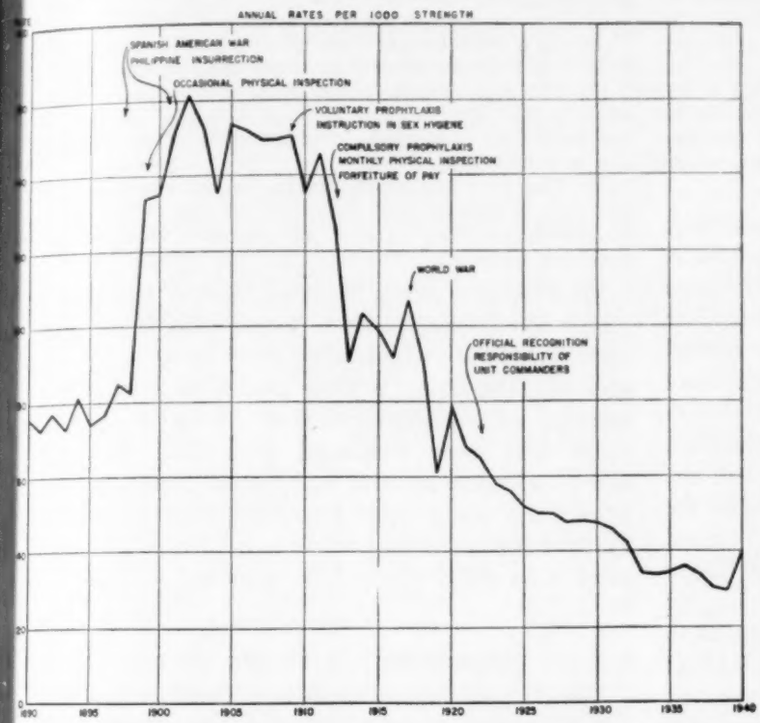
The thesis of the Parran-Vonderlehr volume is that the May act, passed in July 1941, ought to be made fully effective. "Under the provisions of this Act," to quote the book (p. 88), "It is unlawful to engage in prostitution, to aid and abet prostitution, to keep a house of ill fame, or to rent or permit the use of a vehicle or building for that purpose within such areas around military and naval establishments as the Secretaries of War and Navy may designate in order to protect the health and welfare of the forces. The Federal Bureau of Investigation is responsible for its enforcement." Then the book charges (pp. 89-90) "The plan on paper is perfect. Already some ground gained has been lost. Unless vigorous Federal action is initiated, we may sink to the level of France in our tolerance of prostitution." This charge is further explained (p. 118): "The May Act comes into the picture in that it gives the military commanders the power of initiating action where local interest centers more in the exploitation of the soldier than in the desire to keep him fit to fight."

Now the phrases that have been quoted must be examined in the light of what has actually occurred since the May act was passed in July 1941. In the first place the chief of staff, G. C. Marshall, by order of the Secretary of War, issued circular 170 on August 16, 1941. This circular says:

> II.—*Prohibition of prostitution within reasonable distance of Military Establishments.*—The following procedure is prescribed in order to carry out effectively the provisions of the act of Congress approved July 11, 1941 (sec. I, Bull. No. 23, W. D., 1941):
>
> 1. The commanding officer of each post, camp, or station is basically responsible for determining if and when prostitution in areas adjacent to the military reservation adversely affects

the efficiency, health, and welfare of the personnel of the post, camp, or station. Initially he will enlist the efforts of the local civil authorities to remove such prostitution conditions.

2. If such local cooperative measures are not effective, the local commander will make written request to his appropriate corps area commanders for a special report of prostitution conditions in the specific area adjacent to the post, camp, or station. Such requests will be referred to the Defense Regional Coordinator of the Federal Security Agency who, under existing arrangements, will cause a special investigation and report of conditions to be made. The Regional Coordinator's report when received by the corps area commander will be referred to the local military commander for his information.



Composite rate of venereal disease in United States Army for the last fifty years.

3. If the Regional Coordinator's report transmitted through the corps area commander to the local commander contains factual information of the existence of prostitution, the local commander will again consult the local authorities, inform them of the general contents of the report, and advise them of the action in paragraph 4 which he will be required to take if the unfavorable conditions are not corrected.

4. If the local authorities fail to take corrective measures within a reasonable period of time after they have been informed of the content of the report, the local commander will forward a letter to the Adjutant General, through military channels containing the following:

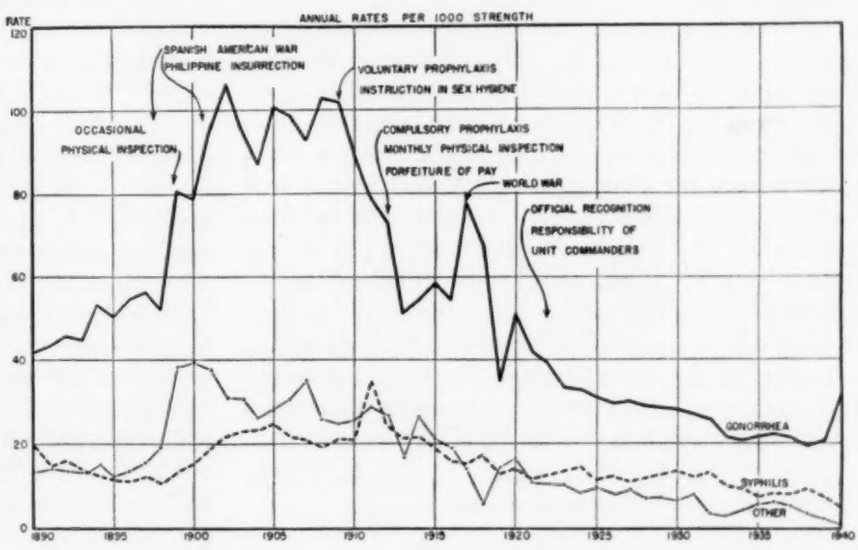
(*a*) A statement of prostitution conditions which are inimical to the efficiency, health and welfare of his command, based upon the Regional Coordinator's report.

(*b*) A narrative of the efforts which have been made to cause the local authorities to correct conditions.

(*c*) A recommendation as to the specific area or areas which the Secretary of War shall publicly announce.

5. If the report indicated in paragraph 4, together with other available information, indicates the existence of a condition harmful to the efficiency, health, and welfare of military personnel at the specified post, camp, or station, the Secretary of War shall designate and publish in the War Department orders the specific area or areas adjacent to or a limiting zone around the post, camp, or station where it shall be unlawful to engage in prostitution or otherwise aid or abet same as described in the Act of Congress referred to above (A. G. 250.18 [3-12-41]).

This circular letter is obviously the due form in which the Army may cooperate with the intent of the May act. No mention of it is made in the Parran-Vonderlehr book or in the de Kruif exacerbation. Perhaps they did not know of it—perhaps the book had gone to the publisher before it was promulgated. However, the United States Public Health Service is a part of the Federal Security Agency. True the administrator, Mr. Paul McNutt, who is also Director of Defense, Health and Welfare Services, has issued a statement to the effect that he did not see the book until the day when the public release by Paul de Kruif appeared. Nevertheless, both the Administrator and Dr. Parran must have been familiar with a statement issued by the Adjutant General of the War Department on Oct. 2, 1941 (A. G. 353.8 [9-13-41] MB-A-M.) on the Establishment of the Division of Social Protection by the Federal Security Agency. "The first task of this Division is to promote the public health by the reduction of venereal disease through the repression of commercialized prostitution" says this statement. The announcement (published in full elsewhere in this issue) is epoch making in the principles it emphasizes and the technic it proposes. Most important is the following paragraph:



Rates for the different venereal diseases in the United States Army for the last fifty years.

4. It is the policy of this Division to work through State and local authorities. It is the hope of those responsible for the administration of this program that the repression of commer-

cialized prostitution will continue as a permanent policy throughout this nation after this emergency is over. This can be accomplished only when State and local authorities and local communities are convinced that repression rather than toleration is the answer to the problem. It is, therefore, the responsibility of this Division to bring about the voluntary adoption of its program by local authorities as a permanent policy. The establishment by military authorities of areas as out of bounds for men in uniform, or the invocation of the May Act, are measures to be taken only as a last resort. Experience in the last war, and the attitude of Federal and local authorities to date in this emergency, all point to the likelihood that our program can be established in most defense areas on a voluntary basis.

This statement also both the Parran-Vonderlehr book and the de Kruif publicity ignore. Yet these official statements are far more in accord with the American tradition than that point of view which would federalize the pursuit of the prostitute in a program for the control of venereal disease. Indeed, this attitude toward more and more federal domination of state and local health activities becomes the focal point of this consideration.

If noninfected selectees are becoming infected, the matter is well worthy of public concern. But does the answer lie in more money to be spent on venereal diseases? The book emphasizes (p. 148) that "State expenditures for venereal disease control this year range from less than $0.005 per capita in Nebraska to $0.12 in Maryland." And the book continues (p. 149): "To do this job necessitates an increase of 75 per cent in present facilities, and at least $10,000,000 annually in Federal funds, beginning now, to extend and improve work already begun against syphilis but which has hardly been started against gonorrhea."

When the de Kruif article was published and when Walter Winchell said over the radio on the same night that this scandal would shake many in high places, the dirty linen was tossed into the public laundry. The effect on the morale of the official personnel in many Washington bureaus was all that the scandal mongers might have hoped. For some days the gossips have been mouthing this morsel with relish. By the available evidence the charges were perhaps not too well founded, the situation not fully reflected, the remedies proposed—(*a*) continence for the soldier, (*b*) federal control of prostitution, (*c*) increased federal appropriations for venereal disease—none too certain in their curative effects and possibly harmful to the body politic.

Meanwhile the Army Medical Department, confident that it is exerting every effort to make its control program effective, lists this outline of its procedures:

(*a*) Physical examinations to prevent the induction into the service of selectees infected with venereal diseases.

(*b*) Education of the soldiers concerning the dangers of venereal diseases, and advice as to the desirability of continence.

(*c*) Provision of prophylactic facilities for those who expose themselves to the risk of infection.

(*d*) Regular monthly physical inspection of troops to detect infected individuals.

(*e*) Thorough treatment until all men who become infected are cured.

(*f*) Isolation of venereal disease patients during the infective stages.

(*g*) Disciplinary measures for soldiers who become incapacitated because of venereal diseases, unless innocently acquired.

(*h*) Cooperation with the Bureau of Medicine and Surgery, U. S. Navy; the U. S. Public Health Service; the Division of Medical Sciences, National Research Council; the American Social Hygiene Association, etc.

(*i*) The reporting to the responsible civil health authorities of known civilian sources from which soldiers are infected, in order that such sources may be traced and eliminated.

(*j*) The agreement with the U. S. Public Health Service whereby the latter, working through state and local agencies, has undertaken to eliminate civilian sources of venereal infection in extramilitary areas.

(*k*) The May law which can be invoked when—and preferably, as all leaders agree—only when existing civilian agencies responsible for the elimination of prostitutes in extramilitary areas fail to do so.

"Plain Words About Venereal Disease" tells of some plague spots—particularly in larger cities of the South and Southwest where segregated prostitution still prevails. The charge is made that 80 per cent of commanding officers are opposed to repression of prostitution and favor regulation (p. 109). Yet actual newspaper accounts from many areas show that many officers are taking their responsibility most seriously. Perhaps the nation as a whole is not too ready to cede more of its obligations to federal control.

ROENTGEN-RESISTANT VIRUS

The Shope papilloma virus is reported by Syverton[1] and his colleagues of the departments of bacteriology and radiology, University of Rochester School of Medicine, to be resistant to many thousand times the roentgen therapeutic dose necessary for cure of the cutaneous lesion that the virus produces in rabbits. Hornlike protuberances on the inner surfaces of the thighs, the back of the neck or other parts of the body are fairly common in wild rabbits; an occasional cottontail has the whole body covered with such "warts." The individual "horns" often reach a centimeter or more in diameter, with a height of 1.5 to 2 cm. In 1933 Shope,[2] of the Rockefeller Institute, reported that this cutaneous disease is readily transferred to wild rabbits by the application of glycerinated wart emulsions to slightly scarified cutaneous surfaces. The infective agent in such emulsions readily passes through the pores of a Berkefeld filter and exhibits other properties warranting its classification as an ultravirus. Rabbits with papillomas are partially or completely immune to reinfection, and their serums partially or completely neutralize the causative virus. Shope further found that, while the virus is readily transmissible in series in wild rabbits, it produces only nontransmissible first generation papillomas in domestic rabbits.

Interest in the Shope papilloma virus was heightened by the subsequent discovery[3] that the nontransmissible warts in domestic rabbits often undergo progressive

1. Syverton, J. T.; Berry, G. P., and Warren, S. L.: J. Exper. Med. **74**: 223 (Sept. 1) 1941.
2. Shope, Richard E., and Hurst, E. W.: J. Exper. Med. **58**: 607 (Nov.) 1933.
3. Rous, Peyton, and Beard, J. W.: J. Exper. Med. **62**: 523 (Oct.) 1935.

malignant changes, many of them eventually giving rise to metastases in regional lymph nodes, lungs and other internal organs. This is of practical clinical interest, since analogous instances of graded alteration from papilloma to cancer are frequent in human pathologic conditions. These secondary cancers are readily transplanted into a new rabbit host. There is immunologic evidence of the continued presence of the Shope virus in these cancers.[4]

Nontransmissible papillomas of domestic rabbits react to roentgen rays as noninfectious tumors. Syverton and his colleagues,[5] for example, found that a continuous or interrupted exposure of these papillomas to 2,000 roentgens will cure 16 per cent of the lesions and that 2,500 roentgens will cure 33 per cent, 3,000 roentgens 66 per cent and 3,500 roentgens or more 100 per cent of all experimental lesions. Parallel in vitro exposures of cell-free Shope virus showed no demonstrable reduction in dosage or virulence until the dose had been increased to more than 2 million roentgens. At least 6 to 7 million roentgens is required for full inactivation. The cell-free suspension of the papilloma virus thus requires several thousand times the therapeutic dose for its sterilization.

Evidently "the curative effect of x-ray on domestic rabbit papillomas (Shope) results from the direct action of the roentgen radiation on the rabbits' cells rather than on the virus." Whether or not the virus is actually killed by the mildly roentgenized rabbit cells has not yet been determined by the Rochester investigators.

4. Kidd, J. G.; Beard, J. W., and Rous, Peyton: J. Exper. Med. **64**: 65, 79 (July) 1936.

5. Syverton, J. T.; Harvey, R. A.; Berry, G. P., and Warren, S. L.: J. Exper. Med. **73**: 243 (Feb.) 1941.

Current Comment

PHARMACOPEIA TRUSTEES ASSURE DIABETIC PATIENTS SAFE INSULIN

The board of trustees of the United States Pharmacopeia, meeting in New York in a special session on November 23, gave special consideration to the problem presented by the expiration of patents on insulin, which occurs Dec. 24, 1941. Heretofore all insulin manufactured in the United States and distributed to persons with diabetes has been subjected to standardization and assay both by the American manufacturers and by the Insulin Committee of the University of Toronto, which holds the patents. The Board of Trustees recommended to the Committee on Revision of the United States Pharmacopeia that standards and assays for insulin be made available at the earliest possible moment, so that the Food and Drug Administration in the Federal Security Agency, which is charged by the Food, Drug and Cosmetic Act with enforcing these standards, may apply the standards immediately on expiration of the insulin patents. Because of the special nature of insulin it is proposed that the two assay control which now prevails under the insulin patents be continued and that the Food and Drug Administration shall not release any product for general sale or distribution until it is assured that the product meets the standards and assays which the United States Pharmacopeia will specify. It is reported that already several foreign manufacturers have shipped insulin to the United States with a view to its distribution just as soon as the patents expire. Such insulin, and all other insulin, will be controlled by the action taken by the Board of Trustees of the Pharmacopeia, cooperating with the Food and Drug Administration. Meeting simultaneously with the Board of Trustees was a specially appointed group of experts from the United States and Canada who will develop the standards and assays to be included in the Pharmacopeia. Thus diabetic patients will be protected against the possibility of using inefficient or toxic products.

MALIGNANT LESIONS OF THE STOMACH

Adequate information on such surgical aspects of malignant lesions of the stomach as the risks involved in efforts to remove gastric carcinoma, on the effectiveness of gastrectomy when this can be successfully performed and on the percentage of the total number afflicted with carcinoma for whom extirpation is feasible seems heretofore to have been largely lacking. With special emphasis on these questions, Walters and his colleagues[1] recently reported in THE JOURNAL a review of all cases of malignant lesions of the stomach seen in the years 1907 to 1938 at the Mayo Clinic. Fifty-eight per cent of the 11,000 patients for whom diagnosis of malignant lesion of the stomach was made at the clinic during these years were subjected to surgical exploration. The average mortality rate was 16 per cent in cases of gastric resection for malignant disease. Thus the risk of this surgical procedure has been comparatively low and the mortality rate has decreased progressively in recent years. In 45 per cent of this group (i. e. 26 per cent of the original group) the lesion was removed. The five year survival rate after resection was 29 per cent, the ten year survival rate was 20 per cent and the fifteen year survival rate was 15.2 per cent. Of patients who did not have extension or metastasis, 44.7 per cent lived five years after leaving the hospital. After patients on whom resection has been performed have survived a five year period, the survival rate closely approximates that of the general population of similar age groups. Significantly, approximately one third of the patients who had carcinomatous lesions of the stomach which were resectable had symptoms of the so-called ulcer type of dyspepsia. In four fifths of these a temporarily effective response, with relief of pain, occurred when the patient was placed on a medical ulcer regimen. The Rochester investigators conclude from this review that the operation of partial gastrectomy affords an excellent means of treatment of cancer of the stomach, with successful cures in a large percentage of cases in which there are localized lesions regardless of the degree of malignancy. The authors further conclude that medical treatment of an ulcer type of dyspepsia should not be instituted without a roentgenologic examination to determine the exact location and nature of the lesion.

1. Walters, Waltman; Gray, H. K., and Priestley, J. T.: Malignant Lesions of the Stomach, J. A. M. A. **117**: 1675 (Nov. 15) 1941.

MEDICAL PREPAREDNESS

In this section of The Journal each week will appear official notices by the Committee on Medical Preparedness of the American Medical Association, announcements by the Surgeon Generals of the Army, Navy and Public Health Service, and other governmental agencies dealing with medical preparedness, and such other information and announcements as will be useful to the medical profession.

MEDICINE AND SELECTIVE SERVICE

LEWIS B. HERSHEY
Brigadier General, U. S. Army; Director of the Selective Service System
Washington, D. C.

Everywhere I go I am under the necessity of thanking some one for a great deal, and it is true here. With 99 per cent of workers in Selective Service unpaid, it is necessary to be continually thanking some one. I do not possess control of the English language adequately to tell you what the work of anywhere from twenty thousand to fifty thousand of the medical profession of America—I am not counting the dentists—has done in the last year in Selective Service.

First I want to talk about the changes that are being made in the physical examination setup; second, I will mention rehabilitation; third, I want to thank you for what you are doing along these lines and beg you to keep on and perhaps to extend.

PHYSICAL EXAMINATION

The law says that the Army or the Navy shall be the final authority on the physical qualifications of the man. That has always been true. A year ago the Army did not feel quite as well organized as it does now to carry all of the responsibilities. Three years ago we planned a system not unlike the one we are going to attempt to use now. We had looked at the experience of a world war in which a quarter of a million people had been sent, many times, several hundred miles from home under the assumption that they were to be, in fact were, members of the armed forces of the United States, only to discover after a final physical examination in the camps that they did not possess the qualifications that the Army at that time insisted on. These men were dislocated from their businesses and from their homes. They were at some distance in time and in space thrown back to reallocate themselves. We realized that three years ago. But a year ago we were not able to get the Army to assume what we thought it should assume, namely to have the physical examination as near as possible to the place where the man lives and to have an examination that was—whether good, bad or indifferent—nevertheless final. After all, there is no perfection in this world. Perhaps there is no adequate physical examination; but we must agree that this is a physical examination and abide by the results of it.

In the World War the Army refused to permit the Selective Service System to say: This man has the qualifications for a soldier. I think it was the intent of the original Selective Service Law in 1917 that the determination was to be made at the local board as to whether or not the man did have the qualifications. If he did he was inducted and became from that time forth a soldier. But we have had the confusion over the years, since the war, of the man who is discharged from the draft and the man who is discharged from the Army with some confusion as to the privileges that go with each.

We started out, however, with the dual examination. We tried to get the Army to bring its induction examination as near as we could in space to the place where the man lived, under the assumption that this at least would cut down the travel when he was rejected. We did not solve to suit us, or the public, the question of time. Many a man received his watch from the chamber of commerce, received the good wishes of his best girl, went to an induction station and found himself trying to get in rather quietly that night to his home town after having been rejected at the induction station. This was unfair to the man and unfair to the medical profession. Obviously the examining surgeon did his best and used his best judgment to try to determine whether that meat and bone and blood and hair added up to an individual who could be a soldier. Some other individuals of the same profession looked at it and said contrariwise. No one was wrong; both were right, but it was unfortunate that they disagreed.

We are trying to correct this situation. We are trying, if we can, to eliminate conflict between technical people, conflict that we understand but which the public does not understand. The public hangs on the words of the medical profession almost as it does on those of the priest. It believes the doctor more than it does the lawyer. When two doctors disagree it is unfortunate for the faith that the individual has in the profession. It is unfortunate for the profession that doctors are forced into a position where there may be some loss of faith. We hope the system we are going to start now will eliminate the time element and the conflict element.

THE SUPPLY OF PHYSICIANS

All that has been said during the past year on the necessity of deferment of doctors, of interns, of residents, of medical students and even of premedical students should make it unnecessary to speak about the need for physicians. If there is a scarcity of doctor hours in the United States there is no excuse for duplication of effort. Whenever there is a physical examination here that is absolutely going to be duplicated there it cannot be justified when each doctor hour is important. We have a right to try to have a physical examination that does not need to be duplicated either in paper work or otherwise. Many honest hours might be given to saving life that medical men have been obliged to spend in putting figures down somewhere that might be improperly interpreted and, even if prop-

Read before the Annual Conference of Secretaries of Constituent State Medical Associations at the headquarters of the American Medical Association, Chicago, Nov. 15, 1941.

early interpreted, would not lead to any action. Any time, any moment, any minute, any second we use in duplication is unwise. We are striving to try to make that which the medical examiner of the local board does complementary to what is being done later, rather than paralleling and duplicating.

THE SUPPLY OF MEN

We started with seventeen million five hundred thousand men, which seemed just lots and lots of men, but they have fallen out of the basket in one way or another. We do not have on hand as many as we should have with that large number. The fact that we are getting into somewhere near a shortage means that we must look over carefully the individuals we are rejecting.

I have no right to speak for the Army, but merely as one who has had some experience with it, and looking at it from the outside, I think it says "Here is an opportunity to have the healthiest Army any nation ever had." I think undoubtedly it has! I think it has a tendency to say "If there is any doubt about whether this man can pass or not, we will fail him." That is fine if there are enough men in the country to furnish the numbers wanted, but if the number is raised much from where it is now I fear we must depart from that. Hence we are tending to say to our medical examiners in this new method or modification of physical examination "You in the local board reject the man who is manifestly unfit for service. Where there is a question in your mind about whether he is unfit for service, record especially what you know about his emotional behavior patterns and forward it, and let the Army, which, after all, is by the act vested with the responsibility of deciding in what cases it wants to take the chance and in what cases it does not, from what it sees of the man and what it learns from what you have recorded, decide what it shall do with him."

CHANGE IN FORMS

We are trying to get a single form, which will be called 221, I think, that will be initiated by the local board and sent with the man to the examining station. We will have one complete record rather than too many incomplete records of form 200 here and form 221 there.

COMPENSATION FOR PHYSICIANS

There has been, perhaps because of misunderstanding and perhaps because of actual disagreement, much criticism of us, that we were trying to dump overboard ten or fifteen thousand doctors who had labored long and well. No such thing. I did feel and I do feel now that the doctors of America have put out, uncompensated, for Selective Service more than any other occupation. I do not believe we could expect to go on as we have in the last year, asking them to do this without compensation. I tell you frankly I don't want to try to operate Selective Service when we start on a pay basis, because the one thing that has kept us free from many undesirable things was the fact that we could get men who would work for nothing, who would not work for the wages the government could afford to pay. We have got something far beyond what you can hire at the wages we would expect to pay.

SERVICE OF PHYSICIAN ON DRAFT BOARDS

I would like to make the medical examiner of the local board something above some of the drudgery that has been imposed on him. I wish I could get the local boards to be able to have their medical examiner give them more time in an advisory capacity. In this new change we look forward to a medical examiner as part of the board, not because he is going to do the examining, but because in hundreds of thousands of dependency cases, which involve 70 per cent of them, I find I have to have interpreted to me in a way I can understand a lot of the diseases of dependents. I should like to have these local boards have their medical examiner free enough so that he could say "That is what every 40 or 50 year old man has. Don't worry about that." Or say "He probably will die soon." But the words now supplied as reason for dependency might mean anything, from total disability to quite the contrary.

I would like to relieve the medical examiner as much as possible of the clerical work we have asked him to do. We have had some difficulty in interpreting what our form 200 means; I mention it with no criticism whatever. But these forms 200's are made in sixty-five hundred different places under at least ten thousand different circumstances. They go all the way from being made by kerosene oil and candle to the finest places one could have for examining. The individual examiners—some twenty thousand or more of them—look at life differently. When we try to equate what they have recorded on form 200 we doubt a little sometimes the validity because of the impossibility of supervising the environment under which the examinations have been made.

I believe that if form 221 is initiated in the local board and used to reject the man who is manifestly unfit, used to record everything known about the man who is either acceptable or at least on the borderline, these form 221's fabricated in a hundred places can be supervised to the place that they will tell a definite and believable story about the men who are examined.

Summarizing the examination, we want the manifestly unfit man rejected; we want the doubtful and the acceptable man forwarded. With rehabilitation coming on, we must put the Army on the spot with regard to the doubtful case to learn to what extent the man must be rehabilitated before the Army will accept him. Otherwise, if we commence to rehabilitate all of the individuals we think are rehabilitable we may have a difficult job trying to sell them to the Army.

REHABILITATION

The examiner of the future will, first, examine. Second, he will be recombing the registrants that have been rejected for individuals who, by reexamination, will prove they are fit for general service or who will be found to miss being fit for general service only by the degree that one can rehabilitate. He will be advising registrants as to what they should do to be rehabilitated, assisting many times as a community doctor in rehabilitating the individual and helping the local board and the state headquarters to exercise supervision in determining whether the man has been rehabilitated and in the, for us, rather difficult task of administering properly, efficiently and economically the fees connected with the rehabilitation. The advisory boards will, as they have in the past, tend to assist at times when the case seems a little beyond the capacity of the medical examiner.

The President decided that something must be done with regard to rehabilitation. Selective Service knew exactly who should do it—the Army. The Army wasn't so sure who should do it, but it knew exactly who shouldn't do it—the Army. At the end of the conference—I don't know whether it was because the Army

was a better salesman or what—we came away with a child we thought we had rather safely put in some one else's lap.

This question of rehabilitation is a large one; not only rehabilitation to the general service level or to the class B level but bringing men from the 20 to 40 per cent level, rehabilitating better citizens, without being soldiers, and rehabilitating members of the fair sex.

I am going to speak of rehabilitating individuals who are below the service level up to the service level. I shall not deal with rehabilitation up to the 1-B level. I shall not deal with rehabilitation from 20 to 40 per cent. The responsibility which the President put on us was attempting to push across the borderline the individuals who are hanging on the lower side of it. We feel that there are two or three hundred thousand individuals in that position.

We have asked the Army from now on, when it rejects a man, to say "Do you mean it or is he a person that could be brought up to the level if something was done to him?" Shortly we shall ask the local boards to go back over these lists and try to find for reexamination men who have had a high pulse or high blood pressure and perhaps nothing wrong with them except that they were frightened or even tried to be in that condition at the time they took the examination. We want the medical examiners to go back over these lists to find the individual who, by putting in a tooth or two, or something of that order, can be made a twelve-tooth soldier instead of a ten-tooth reject.

The first job is to take the individuals they are rejecting currently, second, to reexamine those who have some chance of becoming general service soldiers. These individuals will come back to the local board and, after consultation between the medical examiner of the local board and the man, will be given an opportunity, if he comes within the group we feel we can start with, to undertake rehabilitation at the expense, on a fee basis, of the United States in their local areas. Some of the individuals will accept it and some of them will not. We shall ask the Army to induct on a waiver those who do not. Otherwise, if there is no sting in the system I doubt seriously whether we shall accomplish much. If he accepts treatment, we visualize the individual being allowed to be doctored by the professional man he wants to choose. If he is too far away, we feel it is only fair to ask the registrant to pay his own way. We shall have to exercise some sort of control, especially over any physicians who may not do satisfactory work. We must have, after the job is done, approval by the local examiner or, if he needs help, by the medical advisory board, so that a selectee can be sent back to the Army for recheck and supposedly for induction. We must have help from the medical examiner and the medical examining board in taking care of the payment for these cases.

EDUCATION

You have been kind enough to listen to some of us at your national meeting. We do not want to be forward, but we would be glad to have that privilege continued. We hope next year in the summer, if it is reasonably cool and nice at Atlantic City, as I believe it will be, to bring an exhibit there. We understand that the American Medical Association, on occasion, speaks to a listening world of medical men. It might be that the time will come when we have words urgent enough that we might want you to say something in order to get them out, and get them out rapidly.

We shall be glad to give you information for the preparation of articles. We have no desire to send out canned information. We do want to be of assistance whenever we can remove doubt or misunderstanding.

We have had a very satisfactory arrangement during the past year. At your request we have sent people to participate in your state programs or, better still, you get our medical officer in your own state headquarters to take part. He knows more about the national picture than we do. He is no more confused, regardless of what you may think, and he knows a great deal more about what happens out in your state than we do. By and large, he ought to be a better man for you than any of us.

We do believe there might be, in the next two or three months, an excellent opportunity for joint meetings between the medical profession and the dentists in the several counties for consideration of the requirements of the Army and Navy. No one knows what day and hour the Navy may need some individuals by induction. We believe the question of rehabilitation, both medical and dental, will be something that most of these medical societies will be glad to know about.

FEES FOR REHABILITATION

I have two or three questions I shall raise. I should like to have any one give me the benefit of his information on what he thinks of the fees that the experience of the Veterans Bureau has developed for the treatment of different types of cases.

NEUROPSYCHIATRIC CASES

I should like to come on my knees, or any other way, to have the benefit of any one who may have experience on what to do about neuropsychiatric and alleged neuropsychiatric cases. I have had, for ten years and more, a definite interest in the peculiarities of human beings, especially as they keep an individual from being a good flier or a good driver of a tank or otherwise participating in modern war. No one has more sympathy than I have in the necessity for the Army to reject men who will not, under modern conditions, make soldiers, if we know what kind of individuals they are and if we know how to recognize them, and if we can instruct one hundred or two hundred men in that ability. It does not make much difference if one or two persons have that ability unless we can pass it on, because the decision has to be made in at least a hundred places. But I am frankly disturbed, and I have been brought to this point many times by talking with my medical examiners here and there over the country, when they say "I have known the boy since birth, and before, and I rather reject the idea that some one in Milwaukee or some other place in seven or eight minutes can find out things I have not been able to discover; with some knowledge of the human being and having made my living for forty years, or such a matter, practicing medicine, and thinking that, even though I am not an expert in that field, I rather reject the idea that some one can discover on such short notice that he possesses some of these disqualifying things."

I am frankly disturbed by the number of people turned down. I heard Dr. Abell speak this morning about the individuals who are not making the adjustment after they get to camp, and I am not surprised. Sometimes it does become a serious public relation when 40 per cent, as I know of in one place, of the people have been rejected because they presumably are

individuals who might become or were neuropsychiatric. If we get so that there are more than 51 per cent of that variety, I think the thing to do then is to have the kind of war that you can turn over to the majority, rather than expect the minority to wage it.

MEDICAL STUDENTS

The students are not by any right deferred. The law not only says they are not deferred but it says specifically that no class will be deferred. I think we have done very well by the medical student. We have done so well that sometimes I have actually been disturbed. But that is all right. I am perfectly willing, if for the greater good one must do the lesser evil. The local boards have been told that they may defer them, and "may" apparently was in capital letters because, by and large, they have. They have taken some who had been accepted for medical colleges and had not entered. I have the unfortunate task of trying to do something, after I get home, about a fellow who went to the wrong college. I don't know what the answer is going to be, but it isn't going to be right, whatever it is; I can assure you of that.

I am interested in protecting the medical profession, and I am perfectly willing to believe that all the things I have heard about the necessity for physicians are true. I am not so sure that we would do much better even if we had a law. We are faced continually, of course, not only with medical students but also with other students, chemists and a thousand other types of people.

I do believe you occupy a peculiar position in the minds of the people. I don't know whether you are going to kill the goose that lays the golden egg if you start the landslide on the other side. I don't know, but we shall continue regardless. The law would make it easy for us. We could administer, we hope, easier than we could exercise judgment, but we have done much better than I expected. The only reason is that you have been pretty good salesmen. You still do have some of that combination that came from long ago when the medicine man was something a little more than a human being. May you continue to be.

I want to read a poem:

Ten little registrants standing in a line.
One joined the Navy, then there were nine.

Nine little registrants sitting on a gate.
One broke a vertebra, then there were eight.

Eight little registrants, talking 'bout heaven.
One went conscientious, then there were seven.

Seven little registrants, what a strange mix!
One became a pilot and then there were six.

Six little registrants very much alive.
One went and drowned and then there were five.

Five little registrants full of canny lore.
One stole a pig and then there were four.

Four little registrants, spry as they can be.
One became twenty-eight, then there were three.

Three little registrants, all alone and blue.
One fed his relatives, then there were two.

Two little registrants, what can be done!
One went to a psychiatrist, then there was one.

One little registrant classified 1-A.
Physically, mentally, morally okay.

One little registrant to tote a big gun.
He got married and then there were NONE!

ESTABLISHMENT OF DIVISION OF SOCIAL PROTECTION BY THE FEDERAL SECURITY AGENCY

According to a circular issued by the Adjutant General, October 2, the War Department has been advised by the Federal Security Agency of the recent establishment of a Division of Social Protection. The program of this new division follows. Copies of this program were sent by the Adjutant General's office to the commanding generals of all armies, army corps, corps areas and departments and the air force combat command, the chief of the armored force, the chief of the army air forces, the chief of staff, general headquarters and the commanding officers of exempted stations.

PROGRAM OF DIVISION OF SOCIAL PROTECTION

It is the purpose of the federal defense program to safeguard the health and morale of the armed forces and of the workers in defense industry. The Division of Social Protection has been formed to implement this purpose.

The first task of this division is to promote the public health by the reduction of venereal disease through the repression of commercialized prostitution.

The responsibility of the Division of Social Protection is by no means limited to this task, however.

The division is concerned with the protection of the community, and particularly of its girls and young women, from prostitution and other related social hazards. It also stimulates the constructive treatment and care of girls and women detained by the police.

In its long term aspects, this division is an integral part of the total public welfare program. It depends for its effectiveness on the established agencies for public health, medical care, law enforcement, public assistance, recreation and child protection and in turn supplements these agencies in its particular field.

The program of the Division of Social Protection is summarized under four headings, relating to repression, treatment, protection and cooperation:

A. Repression of Commercialized Prostitution

1. The method adopted by the division toward the control of venereal disease is the repression of commercialized prostitution for the purpose of reducing to a minimum contacts by prostitutes with men in the armed forces and in defense industry.

2. While those interested in the program believe in its moral implications, the division considers it most important that the program be administered as a public health and protective measure without any suggestion of a moral crusade. One reason for this is the almost universal resistance of the citizenship of this country against governmental supervision of sexual morality. It may be that this resistance is allied to the fundamental American concept of religious liberty, since religion and morals are so closely associated. Just as the good citizen who is convinced of the importance of religion in human life may be strenuously opposed to any attempt by government to guide the practice of religion, so the good citizen while believing strongly that extramarital relations tend to destroy the values of family life may still be unwilling to see the federal government attempt to control such relations.

3. The program is unalterably opposed to any toleration of commercialized prostitution either in segregated districts or under medical supervision. This is based on experience and studies which have proved that segregation does not segregate

and that medical supervision alone cannot prevent the spread of venereal disease.

4. It is the policy of this division to work through state and local authorities. It is the hope of those responsible for the administration of this program that the repression of commercialized prostitution will continue as a permanent policy throughout this nation after this emergency is over. This can be accomplished only when state and local authorities and local communities are convinced that repression rather than toleration is the answer to the problem. It is therefore the responsibility of this division to attempt to bring about the voluntary adoption of its program by local authorities as a permanent policy. The establishment by military authorities of areas as out of bounds for men in uniform, or the invocation of the May act, are measures to be taken only as a last resort. Experience in the last war, and the attitude of federal and local authorities to date in this emergency, all point to the likelihood that our program can be established in most defense areas on a voluntary basis.

B. Treatment of Prostitutes

1. The aim of this program is to get local authorities to deal with the individual prostitute as a human being with the aim that those who are capable of rehabilitation can be helped back to ways of life which are more constructive.

2. Our field representatives will seek the establishment of facilities for the classification of girls and women picked up by the police so that those who can be helped can be separated from those who show little hope of rehabilitation, and so that those in need of special treatment can be given such treatment or sent to places where treatment is available.

3. Our field staff will seek provision of adequate facilities when needed for the treatment of women, on an individualized basis, whether that treatment is (*a*) medical, (*b*) custodial, (*c*) training, (*d*) placement in jobs, (*e*) placement in family foster homes, (*f*) assistance to return to their own homes or (*g*) other constructive measures.

C. The Protection of Girls in Defense Areas

1. Protection of girls in defense areas involves supervision of places of employment where (*a*) wages may be inadequate to meet the girls' minimum requirements for food and shelter and (*b*) where the girl employee may be subject to pressure to engage in prostitution as a consequence of her employment.

2. It likewise involves supervision of places of commercial recreation where girls may be in danger of being led into prostitution.

D. Cooperation with other Agencies

Those engaged in this program are well aware that this division is only one of many agencies whose work is necessary to bring about the desired results.

1. We do not attempt to work with the man in uniform, leaving his education with reference to social hygiene and the control of his actions to the military and naval authorities.

2. We are fully convinced of the importance of such positive action as the provision for recreation and other leisure time activities for the soldier and sailor but leave that to the military and naval authorities as supplemented by the Division of Recreation of this agency, by the USO and by many other interested agencies and organizations.

3. We are vitally concerned that persons with venereal disease receive prompt, effective and conclusive treatment so that they may first be made noninfectious and, second, cured, and we know that the U. S. Public Health Service is on that job.

4. In the field of law enforcement we depend on local authorities, the Military Police and, in the exceptional case, on the Department of Justice.

5. In the care of the apprehended prostitute and in the protection of girls and young women in danger of prostitution, we depend on the facilities and resources of the agencies of local, state and federal governments.

Conclusion

The Division of Social Protection, then, takes its place as an integral part of the Office of Defense Health and Welfare Services. On the state and local level it will maintain its responsibilities in a cooperative and constructive fashion, working with public officials, private agencies and interested citizens. It stands ready to modify its efforts and plans in accordance with new experiences and developing community needs. It is the will and desire of the American people to protect the health and morale of the men in its armed forces and defense industries. The Division of Social Protection will contribute to this end. We intend so to plan and execute the program that it will be accepted by the states and become the permanent policy of local government throughout this nation.

ELIOT NESS,
Director, Division of Social Protection.

GOVERNMENT STILL NEEDS PHYSICAL THERAPY AIDES

The U. S. Civil Service Commission is intensifying its recruiting efforts to secure physical therapy aides for the government service. About one hundred appointments were made in the last year, and it is expected that more than three hundred and fifty appointments will be made next year in the War Department and Veterans Administration. Positions are open ranging from the student grade to the full grade. Applications may be filed at any time at the commission's central office in Washington, D. C.

A new examination announcement—No. 24-revised—for physical therapy aide ($1,800 a year) and junior grade positions ($1,620 a year) has been issued which cancels and supersedes the announcement No. 24 issued January 20. The education and experience requirements remain substantially the same, but, in order to build up a reservoir of qualified people, applications will be accepted for these two positions from persons who do not meet the regular physical and age requirements. Such eligibles cannot receive regular probational appointment but may be considered for filling national defense needs. Applicants for probational appointment must not have passed their forty-fifth birthday. Persons who received eligible ratings under the examination announced in January need not file new applications unless they have acquired sufficient additional experience to warrant consideration for a grade higher than the one in which they were originally rated.

The examination announcements for physical therapy aide and the junior grade (announcement No. 24-revised) and for student and apprentice physical therapy aide (announcement No. 117 issued July 31) may be consulted or obtained at any first or second class post office or at the Civil Commission, Washington, D. C. Persons who are interested in and qualified for physical therapy work are urged to file their applications at once.

ARMY HEALTH RATES ARE BETTER TODAY

The death rate in the Army from disease now is less than one-tenth what it was in the World War years of 1917-1918, and the venereal disease rate is less than half what it was in that period, the Surgeon General of the Army reported to the War Department on November 14. In 1917 the annual rate for all venereal diseases was 107 per thousand soldiers. In 1918 it was 90 per thousand. The present annual rate approximates 40 per thousand soldiers. The annual rate for syphilis in the Army has showed a consistent decline. In 1918, for instance, the rate was 17.56 per thousand. Progressively the rate dropped to 6.59 in 1939, 5.7 in 1940, and in August of this year it was 5.5. The August annual rate per thousand soldiers for all venereal disease was 43. Incidentally, Selective Service examination of prospective trainees showed that 45.2 men of every thousand were infected with syphilis.

The reductions not only in the death rates from disease but also the rates of venereal disease have resulted from an unremitting campaign by the Army. Newer, more effective medical discoveries and methods have aided considerably. The campaign against venereal disease has brought intensified education in hygiene in the Army, which has recognized that the cooperation of civil authorities in the suppression of prostitution is essential to the suppression of venereal disease in the armed forces.

ARMY RESERVE OFFICERS ORDERED TO ACTIVE DUTY

WAR DEPARTMENT

The following additional medical reserve officers have been ordered to extended active duty by the War Department, Washington, D. C.:

BORKON, Maurice, 1st Lieut., West Kalispell, Mont.
COCKE, John Alexander, 1st Lieut., Charlottesville, Va.
COLDWATER, Kenneth Bryson, 1st Lieut., St. Louis.
MEAGHER, George Beyer, 1st Lieut., Depue, Ill.
MENDEL, Walter H., Captain, Haverstraw, N. Y.
TRIPODI, Anthony, Lieut. Colonel, St. Louis.

Orders Revoked

AHERN, Eugene E., 1st Lieut., Minneapolis.
AUSTER, Benjamin, 1st Lieut., New York.
CRAIG, Paul C., Captain, Reading, Pa.
DeWIRE, Merrill B., Major, Reading, Pa.
DIAMOND, Bernard L., 1st Lieut., Ann Arbor, Mich.
DINGMAN, Reed Othelbert, 1st Lieut., Ann Arbor, Mich.
FAWCETT, Robert M., 1st Lieut., Pittsburgh.
FLYNN, Vincent P., Captain, Pasadena, Calif.
HALE, Clayton H., 1st Lieut., Manlius, N. Y.
HANSEL, Robert J., Captain, Orlando, Fla.
HOBART, Francis W., Captain, Lake City, Iowa.
JARRETT, John T., 1st Lieut., Richmond, Va.
KLINE, Edward M., Captain, Cleveland.
LAUGHLIN, Victor C., Major, Cleveland.
OVERTON, Lewis M., Captain, Des Moines, Iowa.
RUDI, Herbert J., Captain, St. Louis.
TASCARELLA, James W., 1st Lieut., Brooklyn.
WAINER, Amos S., 1st Lieut., Philadelphia.

FOURTH CORPS AREA

The following additional medical reserve corps officers have been ordered to active duty by the Commanding General, Fourth Corps Area, which comprises the states of Tennessee, North Carolina, South Carolina, Alabama, Georgia, Mississippi, Florida and Louisiana:

GARDINE, William G., Captain, Oteen, N. C., Camp Gordon, Ga.
CORPENING, Albert Edward, 1st Lieut., Tampa, Fla., Camp Forrest, Tenn.
METTETAL, Ray W., 1st Lieut., Johnson City, Tenn., Camp Gordon, Ga.
REECE, John Cochrane, 1st Lieut., Newton, N. C., Fort Bragg, N. C.
WINTERS, Allen C., Captain, Alexandria, La., Camp Gordon, Ga.

Orders Revoked

CARITHERS, Hugh A., Jr., 1st Lieut., Winder, Ga.
CROOM, Arthur B., 1st Lieut., Maxton, N. C.
GARRETT, Broox C., Captain, Shreveport, La.
GESSLER, Carl N., 1st Lieut., McMinnville, Tenn.
HAWES, James B., 1st Lieut., Greenville, N. C.
HUDSON, Harry Horatio, 1st Lieut., Cleveland, Tenn.
HUNTER, William Blair, Major, Lillington, N. C.
PARNELL, Homer S., Jr., 1st Lieut., New Orleans.
PITT, Charles K., 1st Lieut., Trinity, Ala.
SAFELY, Thomas J., Jr., 1st Lieut., Drew, Miss.
THOMAS, Ford Alton, Captain, Urania, La.
WILLIS, Charles A., 1st Lieut., Bainbridge, Ga.

SIXTH CORPS AREA

The following additional medical reserve corps officers have been ordered to extended active duty by the Commanding General, Sixth Corps Area, which comprises the states of Wisconsin, Michigan and Illinois:

ADLAND, Abe, Captain, Sioux Falls, S. D., Reception Center, Scott Field, Ill.
BULLOCK, Norman Charles, 1st Lieut., Rockford, Ill., 1608th Corps Area Service Unit, Camp Grant, Ill.
CENEDELLA, Francis J., 1st Lieut., Moline, Ill., U. S. Army Induction Board, Peoria, Ill.
FITZGIBBONS, James P., 1st Lieut., Chicago, Reception Center, Camp Grant, Ill.
GRIEP, Ernst August, 1st Lieut., Quincy, Ill., 64th Medical Regiment, Camp Bowie, Texas.
GRIFFITH, Paul R., 1st Lieut., Berwyn, Ill., 33d Division, Camp Forrest, Tenn.
HAUGE, Howard Leroy, 1st Lieut., Blanchardville, Wis., 23d Evacuation Hospital, Fort Custer, Mich.
ISOE, I. M., 1st Lieut., Chicago, U. S. Army Air Base, Tucson, Ariz.
JACK, Nelson Briggs, 1st Lieut., Decatur, Ill., Headquarters and Station Complement, Camp Shelby, Miss.
LEES, William Morris, 1st Lieut., Chicago, U. S. Army Induction Station, Kalamazoo, Mich.
MOORE, Rollin Samuel, 1st Lieut., Streator, Ill., U. S. Army Induction Board, Peoria, Ill.
RITTER, Jerome, 1st Lieut., Danville, Ill., U. S. Army Induction Station, Kalamazoo, Mich.
RESTIVO, Jack Liborio, 1st Lieut., Chicago, Richey Flying Service, Vernon, Texas.
RUBINFELD, Samuel H., 1st Lieut., Ontonagon, Mich., Coleman Flying School, Ltd., Coleman, Texas.
STOBBE, Godfrey Dorr, 1st Lieut., Detroit, Station Hospital, Savanna Ordnance Depot.
WOLTERS, Simon Lloyd, 1st Lieut., Chicago, 1607th Corps Area Service Unit, Fort Sheridan, Ill.

Orders Revoked

BARBER, Kent W., 1st Lieut., Quincy, Ill.
BERARDI, James B., 1st Lieut., Dwight, Ill.
BERGSTROM, Paul L., 1st Lieut., Kirkland, Ill.
BICA, Gaetano A., 1st Lieut., Chicago, 5th Infantry Division, Fort Custer, Mich.
BLUEFARB, Samuel M., 1st Lieut., Chicago.
BORKON, Eli L., 1st Lieut., Carbondale, Ill., Headquarters and Station Complement, Corps Area Service Command, Camp Davis, N. C.
BOWERS, Paul A., 1st Lieut., Chicago.
BRAND, Ashley M., 1st Lieut., Chicago.
BROWN, Wilbert O., 1st Lieut., Chicago.
CHABNER, Louis, 1st Lieut., Shelbyville, Ill.
COHLER, Bernard E., 1st Lieut., Chicago.
CONGER, Kyril B., 1st Lieut., Ann Arbor, Mich.
COVELL, Kermit W., 1st Lieut., Racine, Wis.
CUTRERA, Hugo T., 1st Lieut., Chicago, Army Air Base, Tucson, Ariz.
DEL BECCARO, Edward V., Major, Chicago.
DICKERSON, Donald L., 1st Lieut., Danville, Ill.
EMANUELE, Nicola V., 1st Lieut., Chicago.
FLEMING, James F., 1st Lieut., Chicago.
FORTNER, Roscoe J., Captain, Three Rivers, Mich.
GAFF, John H., Lieut. Colonel, Chicago.
GUNDERSON, Robert H., 1st Lieut., Beloit, Wis.
HARLEY, Garth H., 1st Lieut., Detroit.
HERZOG, Paul S., 1st Lieut., Kenosha, Wis.
MARCHMONT-ROBINSON, Harry, 1st Lieut., Chicago.
O'BRIEN, Donald Erwin, 1st Lieut., Chicago, 1627th Corps Area Service Unit, Scott Field, Ill.
LYNN, Harold Phillip, 1st Lieut., Ypsilanti, Mich., Headquarters and Complement, Camp Shelby, Miss.
O'NEILL, Paul J., 1st Lieut., Alton, Ill., Corps Area Laboratory, Fort Sheridan, Ill.
PERKINS, Robert D., 1st Lieut., Moline, Ill.
PORTS, Preston Wesley, Captain, Farmington, Mich., Station Complement, Selfridge Field, Mich.
PRZYGOCKI, Stanley F., Captain, Chicago.
ROKITA, Adam W., 1st Lieut., Barry, Ill.
ROSENBERGER, Maurice D., 1st Lieut., Oak Park, Ill., 1605th Corps Area Service Unit, Fort Custer, Mich.
SIBRANS, William Albert, 1st Lieut., East Detroit, Mich., Will Rogers Field, Oklahoma City.
SLIVE, Alexander, 1st Lieut., Chicago.
SPRINGER, Eugene W., 1st Lieut., Iowa City.
WINSAUER, Henry John, 1st Lieut., Kohler, Wis., Headquarters and Station Complement, Camp Shelby, Miss.

ORDERED TO FOREIGN DUTY

CHALIAN, Alexander Robert, 1st Lieut., Medical Detachment, U. S. Troops, Seward, Alaska.
DENEFF, Carl, 1st Lieut., Hickam Field, Hawaii.
DYSON, John Milnes, 1st Lieut., Station Hospital, Borinquen Field, Puerto Rico.
EMMERLING, John Frederick, Captain, Tripler General Hospital, Honolulu, Hawaii.
GILSDORF, Amos Roy, 1st Lieut., Station Hospital, Fort Richardson, Alaska.

ORGANIZATION SECTION

OFFICIAL NOTES

THE ATLANTIC CITY SESSION

Section Representatives to Scientific Exhibit

Representatives to the Scientific Exhibit have been appointed from the different sections of the Scientific Assembly as follows:

Practice of Medicine—Louis B. LaPlace, 1900 Rittenhouse Square, Philadelphia.
Surgery, General and Abdominal—Grover C. Penberthy, 1553 Woodward Avenue, Detroit.
Obstetrics and Gynecology—Charles Edwin Galloway, 636 Church Street, Evanston, Ill.
Ophthalmology—Georgiana Dvorak Theobald, 120 Medical Arts Building, Oak Park, Ill.
Laryngology, Otology and Rhinology—Fred W. Dixon, 2060 East Ninth Street, Cleveland.
Pediatrics—Arthur F. Abt, 104 South Michigan Avenue, Chicago.
Experimental Medicine and Therapeutics—Dwight L. Wilbur, 490 Post Street, San Francisco.
Pathology and Physiology—F. W. Konzelmann, Temple University Hospital, Philadelphia.
Nervous and Mental Diseases—F. P. Moersch, 102 Second Avenue S.W., Rochester, Minn.
Dermatology and Syphilology—Hamilton Montgomery, 102 Second Avenue S.W., Rochester, Minn.
Preventive and Industrial Medicine and Public Health—Paul A. Davis, Akron, Ohio.
Urology—John H. Morrissey, 40 East Sixty-First Street, New York.
Orthopedic Surgery—Jesse T. Nicholson, 1614 Locust Street, Philadelphia.
Gastro-Enterology and Proctology—Grant H. Laing, 122 South Michigan Avenue, Chicago.
Radiology—S. W. Donaldson, 326 North Ingalls Street, Ann Arbor, Mich.
Anesthesiology—Paul M. Wood, 745 Fifth Avenue, New York.

Application blanks for space in the Scientific Exhibit at the Atlantic City session may be obtained from the section representatives or from the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago.

ABSTRACT OF MINUTES OF MEETINGS OF BOARD OF TRUSTEES HELD IN CHICAGO, NOV. 13 AND 14, 1941

A full day meeting of the Board of Trustees was held on Thursday, November 13, which was preceded by a full day meeting of the Executive Committee. The Board met again on Friday morning, November 14, to complete its deliberations and then adjourned to attend the Annual Conference of Secretaries of Constituent State Medical Associations.

BINDING OF JOURNAL IN THREE VOLUMES A YEAR

Because of the growth of THE JOURNAL and the weight of the present volumes, it was decided to bind THE JOURNAL in three, instead of in two, volumes each year beginning with 1942.

DR. T. G. KLUMPP ELECTED TO MEMBERSHIP ON COUNCIL ON PHARMACY AND CHEMISTRY

Dr. T. G. Klumpp, Secretary to the Council on Pharmacy and Chemistry, was elected to membership on the Council.

REVISION OF STANDARDS FOR CLINICAL THERMOMETERS

The Board approved a revision of the standards for clinical thermometers established by the Division of Trade Standards, National Bureau of Standards, U. S. Department of Commerce, and reaffirmed the policy of the Association not knowingly to accept advertising for any product that does not comply with the standards of that bureau.

DR. WALTER E. VEST SUCCEEDS DR. E. J. GOODWIN ON COMMITTEE OF COOPERATIVE MEDICAL ADVERTISING BUREAU

Dr. Walter E. Vest, editor of the *West Virginia Medical Journal*, was elected to succeed Dr. E. J. Goodwin on the Committee of Cooperative Medical Advertising Bureau.

ASSOCIATION'S BROADCAST "DOCTORS AT WORK"

The Board approved plans for the continuation of the broadcasting program "Doctors at Work." These programs will be broadcast on Saturdays from 5:30 to 6 p. m., eastern standard time, on the Red network, beginning December 6, and will run approximately twenty-six weeks.

REPRESENTATIVE TO NATIONAL HEALTH COUNCIL

Dr. W. W. Bauer was designated to represent the American Medical Association on the Committee for the Study of Voluntary Health Agencies, which is being established by the National Health Council.

MISCELLANEOUS

Careful consideration was given by the Board to the financial reports for the current year, to plans covering certain phases of the Pan American Session of the Association to be held in 1942, to plans for the celebration of the Centennial of the Association in 1947, to resolutions and memorials referred to it by the House of Delegates at the last annual session and to numerous other subjects, some of which will be reported on at a later date.

WOMAN'S AUXILIARY

Wisconsin

The Rock County auxiliary cooperated with the Beloit Y. M. C. A. and seventeen other city, state and national organizations in presenting a "Hall of Health" exhibit patterned after those at the San Francisco and New York world fairs. The American Medical Association and the Wisconsin Women's Field Army for the Control of Cancer lent exhibits. A theater with movies, slides and plays including the highly praised film "Good-Bye Mr. Germ" was an outstanding feature. Among other cooperating organizations were Beloit College, the state board of health, the Wisconsin Anti-Tuberculosis Association, the American Museum of Health, the state medical association, the Beloit membership of the American Dental Association and many civic organizations.

The auxiliary to the Dane County Medical Society met at Cambridge and voted to appropriate $50 to place *Hygeia* in schools chosen by the committee and also to donate $20 to the loan closet to purchase needed articles. At a recent meeting held at the home of Mrs. N. A. Hill in Madison, thirty-eight members were present. The Hygeia chairman reported that four towns had accepted the offer to place *Hygeia* in their town libraries. Also the county nurses have assigned forty-eight schools in the county to receive the publication. It was reported that twenty layettes had been purchased for use by the loan closet.

At the meeting of the auxiliary to the Waukesha County Medical Society recently in Waukesha, Dr. Irene Stemper of Oconomowoc spoke on "Women in Medicine."

In May, a President's Tea at the home of Mrs. H. G. Nixon, Hartland, was held. George B. Larson, assistant secretary of the state medical society, gave an address on voluntary sickness insurance.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

ALABAMA

Change in Health Officers.—Dr. John I. Mitchell, Haleyville, has been appointed health officer of Winston County, succeeding Dr. William A. Dodson Jr., Double Springs, who resigned to accept a position with the U. S. Public Health Service.

Society News.—The Northwestern division of the Medical Association of Alabama was addressed at Berry, October 21, by Drs. M. Vaun Adams, Mobile, on "Treatment of Cerebral Complications in the Newborn"; John M. Townsend, Birmingham, "Surgical Management of the Ruptured Bladder and Urethra"; William D. Anderson, Tuscaloosa, "Indications for X-Ray Therapy in Everyday Practice"; Lee F. Turlington, Birmingham, "Endometriosis," and Edgar G. Givhan Jr., Birmingham, "Migraine."

CALIFORNIA

Officers of State Board.—Dr. Clark L. Abbott, Oakland, was recently elected president of the state board of medical examiners at a meeting in Sacramento and Dr. Fred R. DeLappe, Modesto, was named vice president to succeed Dr. George Thomason, Los Angeles. Dr. Charles B. Pinkham, San Francisco, was reelected secretary of the board for the twenty-eighth consecutive year.

Society News.—A panel discussion on "Trauma to the Hand" constituted the program of the Los Angeles Surgical Society at its meeting on November 14. The speakers were Drs. William S. Kiskadden, Joseph H. Boyes, Paul E. McMaster and Frank J. Breslin. All are from Los Angeles. ——Dr. Axel N. Arneson, St. Louis, addressed a joint meeting of the radiologic section and the Los Angeles County Medical Association, November 6, on "Carcinoma of the Corpus Uteri."——Charles-Edward A. Winslow, Dr.P.H., Anna M. R. Lauder professor of public health, Yale University School of Medicine, New Haven, discussed "Health Problems of Defense" before the San Francisco County Medical Society on November 11. Dr. Winslow is now serving as Rosenberg lecturer in the public social services at the University of California, Berkeley.

Course of Instruction on the Cyclotron and Its Products.—The department of medicine of the University of California Medical School, San Francisco, announces an open course on the cyclotron and its products. The instructors are members of the staff of the University of California Radiation Laboratory in Berkeley. The course is given in recognition of the fact that the use of the cyclotron and its products has proved their worth and that they are ready for use in biology and medicine. The cyclotron was invented by Ernest O. Lawrence, Ph.D., professor of physics at the University of California, Berkeley, and head of the laboratory, and 1939 Nobel Prize winner, and development of the apparatus in medical and biologic research has been under the direction of Dr. John H. Lawrence, assistant professor of medicine at the medical school. The 225 ton "atom smasher" at the University of California is called the "medical cyclotron."

DELAWARE

State Medical Election.—Dr. William Marshall Jr., Milford, was elected president of the Medical Society of Delaware at its annual meeting in Wilmington, October 7. Other officers include Drs. Richard C. Beebe, Lewes, and Paul R. Smith, Wilmington, vice presidents; Alfred Leon Heck, Wilmington, treasurer, and Charles L. Munson, Wilmington, secretary. Dover was selected as the place for the 1942 session.

DISTRICT OF COLUMBIA

Davidson Lecturer Announced.—Dr. Robert J. Coffey, professor of experimental surgery, Georgetown University School of Medicine, Washington, delivered the Davidson Lecture for 1941 before the Medical Society of the District of Columbia on October 8. The Davidson lecturer is chosen on alternate years by a special committee, the selection going to the winner of an essay competition. Dr. Coffey's paper was entitled "Recent Advances in Diseases of the Pancreas." Dr. Coffey graduated at Georgetown in 1932. The Davidson Lecture was established in 1929.

ILLINOIS

Joint Session of Societies.—The sixty-seventh annual meeting of the District Medical Society of Central Illinois was held jointly with the Sangamon County Medical Society in Springfield on November 6. Speakers included:

Dr. Frederick F. Boyce, New Orleans, Basic Problems of Acute Appendicitis and Cancer of the Stomach.
Dr. Kenneth H. Schnepp, Springfield, Diaphragmatic Hernia.
Howard J. Shaughnessy, Ph.D., Chicago, Encephalitis of Virus Origin.
Dr. Burle B. Madison, Springfield, Nonspecific Infections of the Urinary Tract.
Dr. Fred M. Smith, Iowa City, Certain Aspects of the Treatment of Cardiac Failure.

Clinical Meeting of College of Physicians.—An annual roundup of all fellows and associates of the American College of Physicians of Illinois will form an all day meeting at the New Wesley Memorial Hospital, Chicago, on December 6. The program will include short papers and a clinical pathologic conference. In the evening brief addresses will be delivered by guests. The principal speaker of the evening will be Dr. Edward L. Bortz, associate professor of medicine, the Medico-Chirurgical College, Graduate School of Medicine, University of Pennsylvania, Philadelphia, on "Medical Progress and the American College of Physicians."

Chicago

Annual Dinner of Institute of Medicine.—The twenty-sixth annual dinner and meeting of the Institute of Medicine of Chicago will be held in the Boulevard Room of the Stevens Hotel, December 2. Dr. Rollin T. Woodyatt will deliver the presidential address on "The Story of Acidosis."

Lecture on Beaumont.—Dr. Arno B. Luckhardt, professor of physiology, University of Chicago School of Medicine, will lecture under the auspices of the Robert Sonnenschein Study Group for Medical History at the Michael Reese Hospital, December 10, on "Dr. William Beaumont and the Medical Epic of the Northwest Territory."

Branch Meetings.—The North Shore Branch of the Chicago Medical Society will be addressed, December 2, by Drs. Howard A. Lindberg on "Up to Date Treatment of Pneumonia" and Edwin M. Miller, "Surgical Emergencies of the Newborn."——The North Side Branch was addressed, November 6, by Drs. Henry H. Turner, Oklahoma City, on "Fatigue States in Endocrine Disorders," and Elmer L. Sevringhaus, Madison, Wis., "Menopause and Hypofunction of the Ovaries."

New Cancer Committee.—The Chicago Cancer Committee, Inc., has been organized as a liaison educational agency; Dr. Ludvig Hektoen, executive director of the National Advisory Cancer Council, is chairman. The purpose is to disseminate information on the symptoms, diagnosis, treatment and prevention of cancer, to aid indigent cancer patients to obtain treatment and to work toward the establishment of hospital and other necessary facilities. Dr. William F. Petersen, chairman of the board of governors of the Institute of Medicine of Chicago, is treasurer of the committee; the directors include Dr. John A. Wolfer, chairman of the cancer committee of the Illinois State Medical Society; Dr. Bowman C. Crowell, associate director of the American College of Surgeons; Mrs. Arthur I. Edison, state commander of the Women's Field Army of the American Society for the Control of Cancer, and Mr. Alexander Ropchan, director, health division, Council of Social Agencies, secretary.

IOWA

Society News.—Dr. Louis J. Karnosh, Cleveland, will discuss "Psychiatric Problems in General Practice" before the Linn County Medical Society, December 11, in Cedar Rapids. Dr. Arlie R. Barnes, Rochester, Minn., conducted a clinic on cardiac cases before the society November 13.——Dr. Rolland Russell Best, Omaha, discussed "Causes of Continued Disability Following Cholecystectomy: Management" before the Chickasaw County Medical Society in New Hampton, November 5.——Dr. Lloyd H. Mousel, Rochester, Minn., addressed a recent meeting of the Cerro Gordo County Medical Society in Mason City on "Recent Developments in Anesthesia."

New Members of Fifty Year Club.—Dr. Ferdinand J. E. Smith, Milford, was presented with a plaque by the state medical society in recognition of his completion of fifty years in the practice of medicine. Certificates of membership in the "Fifty Year Club" of the state medical society were awarded to the following members of the Polk County Medical Society in October: Drs. Andros Carson, Des Moines; Jared D. Kerlin, Des Moines; Ellis G. Linn, Des Moines; David T. Nicoll, Mitchellville; Christian Nysewander, Des Moines, and Fred L. Wells, Des Moines.

MARYLAND

Society News.—The Baltimore City Medical Society and the Medical Society of the District of Columbia held a joint meeting in Baltimore, November 7; the speakers were Drs. Hugh H. Hussey Jr. and James Ross Veal on "Treatment of Thrombophlebitis"; Worth B. Daniels, "Epidemic of Bronchopneumonia of Unknown Etiology," and Clarence K. Fraser and John L. Parks, "Lesions of the Vulva." All were from Washington.

Dr. Howard Kelly's Library.—The Howard A. Kelly Library, said to be one of the largest private collections in the country, is being sold in separate items, newspapers reported, November 4. In explaining the reason for the disposal, Dr. Kelly, professor emeritus of gynecology, Johns Hopkins University School of Medicine, Baltimore, is reported to have said "I want to be sure that my books will get into good hands." Dr. Kelly has given collections to various units of Johns Hopkins University, including a group dealing with the life and times of Florence Nightingale to the school of nursing and one on geology and Africa to the Homewood Library of the university. He also gave an extensive mycologic collection known as the Louis C. C. Krieger Mycological Library to the University of Michigan, Ann Arbor. Dr. Kelly began his book collection in 1885.

MICHIGAN

First Award of Foster Welfare Foundation Prizes.—The first award of the prizes for papers on medical research by the Foster Welfare Foundation of Grand Rapids were made at a dinner, October 28. Drs. John T. Hodgen and Charles H. Frantz are winners of the $100 prize offered for Blodgett Memorial Hospital for their paper on "Juvenile Kyphosis." This paper also won the grand prize of $100. Dr. Henry P. Kooistra is winner of the prize for the staff of St. Mary's Hospital for his work on "Pilonidal Sinus—Review of the Literature and Report of 350 Cases." The three winners this year are all graduates of the University of Michigan Medical School, Ann Arbor. The creation of these awards was announced last year. They are available to the staffs of the Blodgett Memorial Hospital, St. Mary's Hospital and Butterworth Hospital, all of Grand Rapids, under the Foster Welfare Foundation of Grand Rapids, founded under the will of the late Clara J. Foster of Newaygo. The conditions stipulated that three $100 cash prizes will be awarded, one for each of the hospitals named, to the author or authors of the best medical paper written by a member of the staff of the hospital, provided the staff of such hospital produces at least five medical papers, including the winning paper, which have been accepted for publication by either a national or a state medical journal during the year commencing May 1, 1940 and ending May 1, 1941. The Kent County Medical Society named the committee of three to judge the papers, representing each hospital, and Charles Judson Herrick, Sc.D., Grand Rapids, professor emeritus of neurology, University of Chicago School of Medicine, Chicago, cooperated with the faculty of the University of Michigan Medical School in judgment of the papers.

MISSOURI

Dr. Koch Lectures in St. Louis.—Fred C. Koch, Ph.D., formerly Frank P. Hixon distinguished service professor and chairman of the department of biochemistry, University of Chicago, Chicago, lectured at the St. Louis University School of Medicine, St. Louis, October 24, on "Recent Biochemical Studies on Androgens."

Society News.—Bradley M. Patten, Ph.D., Ann Arbor, discussed "Development of the Cardiovascular System with Micro-Moving Pictures of Living Embryos" before the Kansas City Academy of Medicine November 21.——Dr. Lawrence D. Thompson, St. Louis, presented a review of the incidence and therapy of pneumococcic pneumonia before the St. Louis County Medical Society on October 8 in St. Louis.

NEW JERSEY

Public Health Meeting.—The New Jersey Health and Sanitary Association will hold its sixty-seventh annual meeting at the Stacy-Trent Hotel, Trenton, December 5. Dr. John L. Rice, health commissioner of New York City, will deliver the principal address, on "Changing Trends in Public Health."

Annual Fall Clinical Conference.—The Medical Society of New Jersey will hold its fourth annual fall clinical conference in Elizabeth, December 3. The morning will be given over to special sessions in various industrial plants. At Elizabeth General Hospital there will be during the entire morning a presentation of cases from the department of malignant and allied diseases and discussion of diagnosis and treatment. The afternoon will be devoted to papers sponsored by the sections of the society:

Dr. Henry C. Barkhorn, Newark, Tonsillectomy by Eversion and Snare.
Dr. Hyman I. Goldstein, Camden, Ulcer and Cancer of the Stomach, Through the Ages.
Dr. Edward C. Klein Jr., Newark, Circulation Time and Venous Pressure: Procedure for the General Practitioner.
Dr. Robert A. MacKenzie, Asbury Park, Ovarian Tumors Complicating Pregnancy.
Dr. Albert S. Harden Jr., Maplewood, Breast Feeding, Its Uses, Production and Preservation.
Dr. Harry J. Perlberg, Jersey City, Radiology in Obstetrics.
Dr. Elmer P. Weigel, Plainfield, Compound Fractures.

Dr. Edward G. Bourns, Westfield, will be the toastmaster at the dinner in the evening, and Johannes Steel, radio commentator, will discuss "World Conditions: A Realistic Appraisal."

NEW YORK

Symposium on Cancer.—The Nassau County Cancer Committee sponsored a symposium on gastric cancer before the Nassau County Medical Society in Garden City, October 28. The speakers were Drs. Fred W. Stewart, New York, pathology; Robert P. Ball, New York, x-ray diagnosis, and Ashley W. Oughterson, New Haven, Conn., surgery.

Society News.—Dr. Henry van Zile Hyde, New York, medical officer, second defense area, addressed the Onondaga County Medical Society, Syracuse, October 7, on "The Health Defense Program," and Dr. Edgar M. Neptune, Syracuse, presented a motion picture on "Treatment of Hip Fractures."——Dr. Bertram S. Levinson, Syracuse, presented a paper before the Syracuse Academy of Medicine, October 21, on "Laboratory and Clinical Observation on 100 Ambulatory Cases of Hypertension" and Drs. Joseph Ernest Del Monico and Charles C. Heck, Syracuse, presented a motion picture on "Fracture of the Patella: Treatment by Excision."——Dr. Leon H. Griggs, Syracuse, addressed the quarterly meeting of the Ontario County Medical Society, Canandaigua, October 14, on "Diseases of the Skin."——Dr. Felix Ottaviano, Oneida, discussed "The Paraffin Pack in the Treatment of Pulmonary Tuberculosis" before the Oneida Medical Society, Oneida, recently.

New York City

Doctors Orchestra Starts Rehearsals.—The Doctors Orchestral Society has resumed its weekly rehearsals at the National Hospital for Speech Disorders under the direction of Mr. Fritz Mahler as conductor. The annual concert will be given at Town Hall on May 8, 1942.

Dr. McGregor to Retire from Teaching.—James H. McGregor, Ph.D., a member of the zoological staff of Columbia University since 1897 and, since 1924, professor of zoology, has announced his decision to retire next year. In recognition of his many years service the Pre-Medical Society of Columbia will give a testimonial banquet to Dr. McGregor at John Jay Hall on the Columbia campus, December 12.

Smallpox on Ship from African Ports.—The American-South African liner *City of New York* arrived in the New York port, November 13, with 1 case and 1 suspected case of smallpox in members of its crew. Vaccinations were started at once on the 82 crew members and 52 passengers. The 2 cases were to be removed to the Marine Hospital on Staten Island for treatment. The last case of smallpox brought into New York by ship was in 1939; another was by ship in 1937. The last locally developed case in New York was in 1932. Contacts in the recent outbreak who are residents of New York City when released by the U. S. Public Health Service will be examined daily by a department of health physician for twenty-one days. Arrangements will be made for similar supervision by local authorities for contacts wherever they go.

Medical-Dental Convention.—The eleventh annual medical-dental convention, arranged by the Joint Committee of the Organized Medical and Dental Professions of the City of New York, will be held at the Hotel Pennsylvania on December 1. Speakers will include:

Dr. Morris L. Rakieten, Bacteriophage in the Treatment of Infections of the Head and Neck.
Grace MacLeod, Ph.D., Vitamins and Diet.
Dr. Louis W. Schultz, Chicago, Treatment of Subluxation of the Temporomandibular Joint.
Dr. Leonard G. Rowntree, medical director, Selective Service, Washington, D. C. Medical Aspects of Selective Service.
C. Raymond Wells, D.D.S., dental director of Selective Service, Washington, Dental Aspects of Selective Service.

There will also be a symposium on "Diagnostic Significance of Head Pains" with Drs. Joseph D. Kelly, Byron P. Stookey and Henry S. Dunning as the speakers.

NORTH CAROLINA

District Meetings. — The Sixth District Medical Society was addressed recently in Raleigh, among others, by Drs. Jerome S. Harris, Durham, on "Recent Advances in Sulfonamide Therapy" and Herman Max Schiebel, Durham, "Diagnosis and Treatment of Acute Surgical Diseases of the Upper Abdomen." —— Speakers before the Ninth District Medical Society in Statesville recently included Drs. Frank B. Marsh, Salisbury, on "The Plasma Protein—Its Physiology Relative to the Normal and Failing Circulation."

Canadians Study School Health Service.—Three officials of the province of Quebec, Canada, visited in North Carolina recently to study the state school health coordinating service with the view of establishing a similar activity in Quebec. They were Hon. Henri Groulx, Pharm.D., minister of health and social welfare, Quebec and Montreal; Dr. Jean Gregoire, Quebec, deputy minister of health for the province and president of the Canadian Public Health Association, and B. O. Filteau, deputy minister of education. The visitors conferred with Dr. Walter E. Wilkins, Raleigh, state school health coordinator; Dr. John F. Kendrick, Raleigh, of the Rockefeller Foundation, adviser to the service, and others. Conferences were also held with Dr. Carl V. Reynolds, Raleigh, state health officer, and with health and education officials in Greensboro and Goldsboro. The North Carolina School Health Coordinating Service is a project of the state board of health and the state department of public instruction.

Society News. — Dr. Charles J. Andrews, Norfolk, Va., addressed the Tri-County Medical Society of Washington, Martin and Tyrrell counties at Plymouth, September 24, on "The Nausea of Pregnancy."——Dr. James F. O'Neill, Winston-Salem, addressed the Forsyth County Medical Society, Winston-Salem, September 9, on "Infusion of Blood and Other Fluids into the General Circulation by Way of the Bone Marrow Cavities."——Dr. Thomas B. Mitchell, Shelby, among others, addressed the Thermal Belt Medical Society in Shelby, October 16, on "Effective Therapy in Chronic Alcoholism."—— Drs. Robert H. and Margaret E. L. Owen, Canton, discussed "Oophorrhagia" (ovarian hemorrhage) before the Haywood County Medical Society in Waynesville recently.——Dr. Mark A. Griffin, Asheville, addressed the Buncombe County Medical Society, Asheville, October 6, on "Chronic Alcoholism" and Dr. Julian A. Moore, Asheville, October 20, "Regional Ileitis."

OHIO

The Farm Security Medical-Health Program. — The medical-health program of the Farm Security Administration was in operation in forty-four counties in Ohio, August 30, with about three thousand farm families participating and between six hundred and seven hundred physicians rendering services, the state medical journal reports. The so-called pooled plan is in operation in each county, the funds being contributed by FSA clients participating in the program from money borrowed from the federal government under the farm rehabilitation program. The average annual amount paid by each participating family is about $22.

Society News. — Dr. William J. Dieckmann, Chicago, addressed the Summit County Medical Society, Akron, October 7, on "Management of the Toxemias of Pregnancy."—— Dr. Richard B. Cattell, Boston, addressed the Butler County Medical Society, Middletown, recently, on "Diagnosis and Management of Lesions of the Large Bowel."——Dr. Charles D. Aring, Cincinnati, addressed the Montgomery County Medical Society, Dayton, October 3, on "Polyneuritis." —— Dr. Charles E. Howard, Cincinnati, addressed the Stark County Medical Society, Massillon, September 10, on "Proctology as Related to General Practice."——Drs. George Crile Jr. and Allen Graham, Cleveland, addressed the Trumbull County Medical Society, Warren, recently, on "Diagnosis and Treatment of the Jaundiced Patient" and "Clinical Versus Pathological Malignancies" respectively. —— Dr. Stanley Milton Goldhamer, Ann Arbor, Mich., addressed the Mahoning County Medical Society, Youngstown, recently, on "Diagnosis and Treatment of the Anemias."

PENNSYLVANIA

Society News. — The Lycoming County Medical Society conducted its annual clinic meeting at the Lycoming Hotel, Williamsport, November 14; speakers were Drs. Carl E. Ervin, Harrisburg, on "Early Diagnosis of Carcinoma of the Stomach"; Clayton T. Beecham, Philadelphia, "Early Diagnosis of Cancer of the Urogenital Tract"; Stanley P. Reimann, Philadelphia, "Experiments on Cell Division," and Roscoe W. Teahan, Philadelphia, "Considerations on the Early Diagnosis of Cancer."

Annual Postgraduate Day.—The Harrisburg Academy of Medicine will hold its annual postgraduate day in Harrisburg, December 2. Speakers and their subjects will be:

Dr. Frank H. Lahey, Boston, Diseases of the Stomach, Duodenum and Jejunum; Modern Developments in Thyroid Disease.
Dr. James L. Poppen, Boston, Diagnosis, Management and End Results in Herniations of the Intervertebral Disk; Diagnosis and Treatment of Brain Tumors—A Problem for the General Practitioner.
Dr. Gilbert E. Haggart, Boston, Chronic Low Back Pain and Sciatica; Problems in Fracture Treatment.
Dr. Elmer C. Bartels, Boston, Diagnosis and Operative and Non-operative Treatment of Hypertension; Some Medical Problems: Management of Obesity, Management of Addison's Disease, Diagnosis and Treatment of Gout.

Philadelphia

Society News.—The November 12 meeting of the Philadelphia County Medical Society was designated "Clinical Pathology Night"; speakers were Drs. Russell Richardson on "Interpretation of Clinical Laboratory Methods Useful in the Diagnosis and Treatment of Diabetes Mellitus"; William P. Belk, Wynnewood, Pa., "Clinical Pathologic Methods Useful in the Diagnosis, Classification and Prognosis of Bright's Disease," and Herbert Fox, "Value of the Tissue Biopsy to the Clinician, Radiologist and Pathologist." —— The Philadelphia Laryngological Society was addressed, November 4, among others, by Dr. Edward H. Campbell on "Impressions of the Labyrinth Fenestration Operation for Deafness Gained from Three Years' Experience." —— Drs. James P. Quindlen and Robert C. McElroy, among others, addressed the Obstetrical Society of Philadelphia, November 6, on "Management of Dead Abdominal Pregnancy." —— Dr. Brooke M. Anspach, among others, spoke before the Philadelphia Rheumatism Society, November 6, on "Role of Gynecologic Disorders in the Production of Arthritis."

Appointments to Woman's Medical College. — Dr. Edward J. G. Beardsley, clinical professor of medicine, Jefferson Medical College of Philadelphia, has been appointed professor and head of the department of medicine at Woman's Medical College of Pennsylvania, and Dr. Benjamin Tertius Bell has been named professor and head of the department of orthopedics. Other new appointments to the faculty include:

Dr. Clara L. Davis, Lansdowne, Pa., clinical assistant professor of medicine.
Dr. Mary H. Easby, clinical assistant professor of medicine.
Dr. Katherine A. Elsom, Narberth, Pa., clinical assistant professor of medicine.
Dr. John P. North, clinical professor of surgery.
Phyllis Bott, Ph.D., associate professor of physiologic chemistry.
Dr. Eula Eno, associate professor of obstetrics.
Dr. Yvonne M. Turk, clinical assistant of gynecology.
Dr. Claire Miller, clinical assistant of pediatrics.
Dr. John E. Eicholz, clinical assistant of psychiatry.
Dr. Frederick Jardon, clinical assistant of psychiatry.
Dr. Elizabeth M. Johnson, clinical assistant of psychiatry.
Dr. J. Hamilton Allan, clinical assistant professor of orthopedics.
Dr. Frank S. Clarke, clinical assistant professor of radiology.
Dr. Sylvia A. Mazer, clinical assistant of urology.
Dr. Ruth F. Harral, assistant professor of anesthesia.

New departments of anesthesia, gastroenterology and urology have been established under the following professors: Drs. Julia H. Hardin, professor of anesthesia; Mary M. Spears, professor of gastroenterology and proctology, and Faith Fetterman, professor of urology. Dr. Carmen C. Thomas has been promoted to be professor and head of the department of dermatology and syphilology. The hospital has been reorganized with Dr. Eno as medical director, and a new system has been introduced for residencies offering graduate work in medicine, pediatrics, surgery and gynecology.

SOUTH CAROLINA

Personal.—Martin D. Young, Columbia, has been appointed director of the Malaria Research Laboratory at the South Carolina State Hospital, Columbia, which is under the direction of the U. S. Public Health Service. He succeeds the late Bruce Mayne, Dr.P.H., *Science* reports.

Changes in Health Officers.—Dr. John M. Bearden is the new health officer of Laurens, succeeding Mr. L. M. Price, effective August 15.——Dr. Robert D. Hicks, Chester, has been named director of the Chester County Health Department, succeeding Dr. Walter G. Crawley Jr., Lancaster, who has been dividing his time recently between Chester and Lancaster counties, it is reported.

TEXAS

Change in Meeting Place.—The State Medical Association of Texas announces that the 1942 annual session will be held in Houston, May 11-14, instead of Corpus Christi as was previously announced. According to the state medical journal, the change was made on account of the lack of cooperation of the Robert Driscoll Hotel management in Corpus Christi.

Society News.—Dr. Jay C. Crager, Beaumont, addressed the Jefferson County Medical Society in Beaumont, September 8, on "Aviation Medicine." —— Drs. Simeon H. Hulsey, Fort Worth, and Thomas M. Jarmon, Tyler, addressed the Hunt-Rockwall-Rains Counties Medical Society, September 9, on "Bronchial Asthma in the Aged" and "Common Problems in Diagnosis in Urology" respectively, and Dr. Neil D. Buie, Marlin, president of the State Medical Association of Texas, discussed "Medical Personnel and the American Medical Association." —— Dr. Samuel R. Snodgrass, Galveston, discussed "Herniation of Intervertebral Disks" before the Jefferson County Medical Society in Port Arthur, October 13.

WISCONSIN

Lectures by Latin American Minister of Public Health.—Dr. Juan César Mussio-Fournier, minister of public health, Uruguay, S. A., and director of the Institute of Endocrinology, Pasteur Hospital, Montevideo, Uruguay, spoke before the University of Wisconsin Medical Society, Madison, October 23. The titles of the lectures were "Local Action of Hormones" and "The Importance of Studying the Development of the Dental and Osseous Systems in Hypothyroid Infantilism."

Annual Dearholt Day.—The second annual "Dearholt Day" was observed in Madison on November 11 under the auspices of the Wisconsin Anti-Tuberculosis Association, the University of Wisconsin Medical School and the Dane County Medical Society. Lectures were delivered by Dr. Esmond R. Long, professor of pathology, University of Pennsylvania School of Medicine, and the director of the Henry Phipps Institute, Philadelphia, and Dr. Kendall Emerson, managing director of the National Tuberculosis Association, New York. Dr. Long spoke on "Some Correlations of the Pathology and Epidemiology of Tuberculosis" and "The Roles of Environment, Nutrition and Constitution in Tuberculosis" and Dr. Emerson on "The Doctor's Duty as a Citizen" and "Voluntary Health Agency and the Physician." The special observance is held in honor of the late Dr. Hoyt E. Dearholt, Milwaukee, for many years executive secretary of the Wisconsin Anti-Tuberculosis Association.

GENERAL

Noise Abatement Group Chooses Officers.—William Reynolds, New York, was elected president of the National Noise Abatement Council at its annual meeting in New York on October 24, succeeding George P. Little, Chicago. Other officers elected include W. L. Manning, Chicago, vice president; G. L. Bostwick, Chicago, treasurer, and F. Edgar McGee, Buffalo, executive secretary. At this meeting the council announced a year round program for communities throughout the country to reduce unnecessary noise in homes, offices, industries and public places. Heretofore activities of the council have centered around local noise abatement week campaigns conducted in various communities during June.

Academy of Dermatology and Syphilology.—The fourth annual meeting of the American Academy of Dermatology and Syphilology will be held at the Waldorf-Astoria Hotel, New York, December 14-18. Special lectures will be delivered by the following guest speakers:

Dr. Perrin H. Long, Baltimore, Clinical Use of the Sulfonamide Compounds.
Dr. Jesse Bedford Shelmire, Dallas, Texas, Diagnosis and Treatment of Weed Dermatitis.
Dr. Vicente Pardo-Castello, Havana, Cuba, Diseases of the Nails.
Dr. Cornelius P. Rhoads, New York, Newer Knowledge Concerning the Chemical Causation of Cancer.
Dr. Edward Lodholz, Philadelphia, Physiology of Pigmentation.

Symposiums and their leaders include: Avitaminoses, Dr. Paul Gross, New York; physiology and chemistry, Dr. Donald M. Pillsbury, Philadelphia; allergy, Dr. Samuel M. Peck, New York; syphilis, Dr. Udo J. Wile, Ann Arbor, Mich., and pharmaceutical therapeutics, Dr. Otto H. Foerster, Milwaukee. There will be special courses on histopathology, mycology, roentgen ray and radium therapy and photography, and many round table discussions covering various aspects of dermatology and syphilology.

New Fellowships in Nutrition.—Swift & Company, Chicago, has announced the establishment of a series of fellowships for research in nutrition. Intended to aid the federal government in its long range national program in nutrition, the fellowships provide for special research to be undertaken in laboratories of universities and medical schools with funds set aside by Swift & Company as grants in aid, beginning on November 1. The fellowships will be for one year but may be renewed when the project warrants it. Any fundamental study of the nutritive properties of foods or the application of such information to improvement of the American diet and health will be eligible for consideration for a grant. Placement of the new fellowships will be coordinated by R. C. Newton, Ph.D., and his staff of the Research Laboratories of Swift & Company, Union Stock Yards, Chicago.

Syphilis Drops with Compulsory Marriage Test Laws.—A survey by the Council of State Governments in sixteen of twenty-six states where couples planning to marry must first take blood tests shows a reduction in the syphilis rates, it was reported on October 9. The survey reported a rate of 1.28 per cent in the group taking premarital examinations. A recent estimate by the American Social Hygiene Association that the syphilis rate among the nation's adult population during the period 1935-1940 was 3.24. In making the survey, six states which have adopted premarital laws this year and four others in which these laws have been enforced for comparatively short times were excluded. According to the report, Connecticut recorded an over-all reduction from 2,494 cases in 1936 to 1,903 in 1940. Positive cases among applicants for marriage licenses in Rhode Island declined from 1.6 per cent in 1938 to 1.1 per cent in 1939 and to 0.9 per cent from July 1, 1940 to June 30, 1941. Transmission of syphilis has occurred in as many as 60,000 cases a year in the United States, according to the survey. Between 1935 and 1940 1.69 per cent, or 4,791 cases in a total of 282,667 mothers examined, showed evidences of the disease, figures of the social hygiene association revealed. Most of the antepartum blood test laws require that the tests be made within thirty days of the first medical examinations and several specify "at the same time of the first examination." Only about one third of the antepartum blood test laws provide penalties for avoidance, and few require treatment to follow positive results, so that the measures now in effect are mainly educational, it was pointed out. According to the survey of the Council of State Governments, however, positive examinations usually bring the mother back for treatment.

CORRECTION

The National Nutrition.—In the first paragraph of the letter to the editor by Dr. Logan Clendening in THE JOURNAL, September 20, page 1035, the first word in the fourth line should have been "health" instead of "wealth," and the reference to *Technology Review* in the sixth line should have been to the June 1940 issue instead of to the August 1940 issue of that periodical.

Government Services

Advisory Committee on Care of Children

An advisory committee on the daytime care of children has been set up under the Children's Bureau, U. S. Department of Labor, Washington, D. C., to work out an adequate program to care for children whose mothers are employed in defense work. The committee is composed of social workers, health officials, pediatricians, educators, nursery school people and experts in day nursing, newspapers reported. Subcommittees also are at work devising standards for procedure in day nurseries, nursery schools and recreation centers for this age level. The findings of these committees will be passed along as recommendations to state and local agencies. The creation of the committee was announced during the recent meeting of the American Public Health Association in Atlantic City by Dr. Martha M. Eliot, associate chief of the Children's Bureau. Mothers in defense industries will be able to work more efficiently, it is believed, knowing that their children are receiving proper supervision and care while they are away. Some of the important items to be developed include a well balanced feeding program, proper health supervision for these centers and more intelligently supervised play in the day nurseries. Consideration will also be given to recreation centers for school children to fill in the gap between the time when school is out and their mothers return from work, it was said.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Oct. 11, 1941.

Food Supplies Under the Lend-Lease Act

The Ministry of Food states that the total supply of food likely to come to Britain under the lend-lease act will constitute only some 5 or 6 per cent of our total consumption, but its value is more than these figures suggest. It includes concentrated proteins, such as cheese, canned milk, dried milk, eggs, canned fish and canned meat. The canned milk forms a considerable proportion of our total supply. Food distribution is carried out by wholesalers to whom the government sells. The Ministry of Food exercises a close control over all profits, so that neither wholesalers nor retailers receive more than is adequate to cover their services. The whole price level is stabilized by the government. In the case of certain necessaries, such as bread, they provide a subsidy to prevent the price rising above a certain level. The price of the more important foods is controlled, and no food received on lend-lease terms will be sold at uncontrolled prices.

Mr. Paul H. Appleby, United States Undersecretary of Agriculture, who is in this country, stated in a press interview that America was sending to Britain as much canned pork of high quality as had ever been produced there in a single year. Britain was taking a quantity of evaporated milk equal to America's former total production and dried milk in excess of the former production. Of dried eggs the quantity was a thousand times the total previous output, and the contribution of shell eggs would be 7.5 per cent of the total output of a thousand million hens. Previously America imported cheese, but now Britain was to receive 45 per cent of America's annual output. Other commodities to be sent included canned tomatoes, dried beans, fish, oils, oranges, a great quantity of lard, dried fruits and a fourth of America's salmon.

International Scientific Conference on Postwar World Order

A scientific international conference is to be held in London to demonstrate the common purpose of men of science in ensuring a postwar order in which the maximum benefits of science will be secured for all people. Among those who will preside at the sessions are the American ambassador, Mr. Winant, the Soviet ambassador, M. Maisky, the Chinese ambassador, Mr. Wellington Koo, the president of Czechoslovakia, Dr. Benesh, Mr. H. G. Wells and the president of the British Association for the Advancement of Science, Sir Richard Gregory. The conference is being organized by the British Association's division for social and international relations of science. At the end Sir Richard Gregory will put forward a new charter of scientific fellowship. Czechoslovakia, Poland, Norway, the Netherlands, Belgium and France will be represented, and exiled scientists from Germany, Austria and possibly Italy will also take part. The conference will seek to define the part which science can play in helping to secure the best use of the possibilities of the twentieth century and to make practical contributions to the solution of problems.

Anglo-Soviet Medical Cooperation

The inaugural meeting of an Anglo-Soviet medical committee was held at the rooms of the Medical Society of London. The committee has the support of the leaders of the profession, including Sir Charles Wilson, president of the Royal College of Physicians, Sir Frederick Gowland Hopkins, past president of the Royal Society, Sir Philip Manson-Bahr and Prof. J. A. Ryle. Support has been promised by the medical branches of the navy, army and air force. Sir Alfred Webb-Johnson, president of the Royal College of Surgeons, who was elected president of the committee, said that the medical profession in this country had been intensely interested in the colossal experiment in environmental and social medicine carried out in the Soviet Republic. M. Maisky, the Soviet ambassador, said that victory in this war and peace in the future largely depends on close cooperation between Britain and the Soviet Union. He had a warm spot for the medical profession, as his father was an army doctor and his brother was also a doctor and was now in charge of a hospital. Lieutenant General Hood, director general of medical services at the War Office, said they would there welcome as much information as they could get on the medical services of the Russian forces.

The Diagnosis and Treatment of Cancer

The state in Great Britain plays a greater and greater part in the treatment of disease. At first public health legislation was confined to particular classes of the community: mothers, young children and children of school age. Then the state created organizations for the treatment of particular diseases: tuberculosis, venereal diseases and, last of all and quite recently, cancer. In 1939, just before the war, the cancer act was passed in order to ensure the earlier diagnosis and treatment of cancer. There was need for it, as many cases reached an advanced stage before diagnosis was made or adequate treatment was available. A deputation from the Royal College of Surgeons presented a memorandum to the minister of health pointing out the need for early and accurate diagnosis, increased facilities for the training of radiotherapists and the establishment of a national cancer institute. The cancer act makes provision for the diagnosis and treatment by requiring local health authorities to submit to the minister of health arrangements which secure in their areas adequate facilities for these purposes. The facilities for treatment include surgery, radium and high voltage roentgen therapy. The patients may be dealt with either in the present voluntary hospitals or in hospitals maintained by the local authorities. The outbreak of war caused the minister of health to postpone until March 1942 the coming into force of the act. This extension of time was given because of the burden of additional work thrown on the local authorities by the war. A further extension to March 1943 has now been granted, as the minister recognizes that in general it is not possible for the local authorities to make complete arrangements at the present time. But he emphasizes the importance of providing facilities for expert diagnosis and skilled treatment of all who are suffering from or suspected to be suffering from cancer.

In view of the necessity of reserving the capital and material resources of the country for works of strategic importance, local authorities are told to exclude from their interim arrangements the erection of new buildings, elaborate extensions to existing buildings or the provision of costly new equipment. But the minister considers that much can be done, even under present conditions, by extending facilities for the diagnosis and treatment of cancer; e. g., by making agreements with hospital authorities having the requisite staff and equipment, by payment of traveling expenses when necessary and by making known to the public the facilities thus provided. In some of the especially vulnerable areas, conditions may be reducing or impeding the hospital facilities available to cancer sufferers, who may thus be precluded from obtaining the treatment likely to benefit them. To counteract this the minister is endeavoring to arrange for the establishment of cancer treatment centers at certain of the hospitals in the emergency hospital scheme outside the towns which they would serve. Arrangements should be made for the transfer to them of suitable patients.

Prof. A. J. Clark—A Great Pharmacologist

The death of A. J. Clark, F.R.S., professor of materia medica in the University of Edinburgh, after an operation at the age of 56, has removed an eminent pharmacologist. Educated at Cambridge and St. Bartholomew's Hospital, he at once turned his attention to pharmacology, of which he became demonstrator at King's College, London, and lecturer at Guy's Hospital. He joined the Army Medical Service in the last great war and received the military cross for gallantry and devotion to duty. After the war he was successively professor of pharmacology at Cape Town, University College, London, and Edinburgh University. He was a member of the Medical Research Council and pharmacologic adviser to the *British Medical Journal* for twenty years. He was author of many important books, of which "Applied Pharmacology" reached a seventh edition. Others were "Comparative Physiology of the Heart," "Mode of Action of Drugs on Cells" (an original work which gained him a high reputation in other countries) and "General Pharmacology." Sir Henry Dale, president of the Royal Society, describes Clark's principal aim as "interpreting the actions of drugs in more fundamental terms." In a small popular book entitled "Fact," there appeared in 1938 from his pen the most authoritative exposure of so-called patent medicines since the British Medical Association published "Secret Remedies." He showed that the annual turnover of the trade in patent medicines was about $100,000,000, which is nearly equal to the cost of hospital services and between twice and three times the cost of drugs prescribed by physicians. About one sixth of the advertising space in journals was devoted to nostrums. The revenue derived by periodicals from this can be imagined from the fact that eight firms which advertised remedies for nervous and digestive disorders spent $5,000,000 annually, and a company which advertises a brand of acetylsalicylic acid stated that they proposed to spend nearly this sum in three hundred papers. When the British Medical Association issued "Secret Remedies," containing analyses, costs and the like, not only was it not noticed editorially by most papers but advertisements of it were declined by many.

BUENOS AIRES

(From Our Regular Correspondent)

Aug. 29, 1941.

Bureau of Aviation Sanitation

The national health department has petitioned the ministry of the interior to establish within the division of river and ocean sanitation a bureau of aviation sanitation. Airplanes which land in Argentina fly, in part, over extensive infected regions, where insects may easily be acquired as unwanted passengers. Besides, air passengers themselves might be infected. Aviation has greatly increased within recent years. In 1938, 771 airships carried 7,328 passengers in Buenos Aires; in 1940, 1,762 air vessels conveyed 15,845 passengers. It must also be taken into account that the period of incubation does not run its full course during the short time the passengers are on board.

Brief Reports

Prof. Dr. José Arce, professor of clinical surgery at the faculty of medicine in Buenos Aires, has resigned to devote himself completely to the study of thoracic surgery.

Dr. Delfor del Valle Jr. was appointed professor of clinical surgery at the faculty of medicine of the University of Buenos Aires to succeed Prof. R. Armando Marotta, who retired. Dr. del Valle is chief of the department in the Ramos Mejia Hospital; together with two other section heads he organized the Instituto Gastroenterologia.

The Asociación Argentina para el Progreso de las Ciencias has granted a stipend to Dr. Enrique A. Viacava, assistant at the surgical clinic of the university, which is to enable him to study the surgical treatment of cancer at the Memorial hospital in New York.

The Pan American Sanitary Bureau, in cooperation with the Rockefeller Foundation for Argentina, has provided seven stipends, which are distributed by B. A. Houssay, professor of physiology. A total of thirty-five such stipends have been planned for South America. The stipendiaries are to be attached for one year to hospitals in the United States, to extend their training.

To combat infectious abortion among cattle, Argentina has introduced certification, which is required for import as well as for export. This is to prevent the consumption of infected meat by human subjects.

A newly founded branch of the Asociación Médica Argentina is the Sociedad de Medicina Industrial in Buenos Aires. Its task is to study the dangers to the health of the worker created by fatigue, lack of cleanliness, use of toxic substances, illumination, and so on.

In July the Argentine Red Cross arranged for the shipment of food to British prisoners in Germany. The shipment consists of four hundred and eighty boxes weighing in all 22,000 Kg. The international Red Cross in Geneva will take care of the distribution. In the same manner French prisoners of war of Germany are to receive 18,400 pounds. The means for these shipments were provided by the British and French colonies in Argentina.

Society News

The American Institute for the Protection of Infancy met in Montevideo, Uruguay, under the chairmanship of Dr. Gregorio Aráoz Alfaro. Dr. Felix Brunot, delegate of the Unión panamericana, Dr. Justo González, director of the Oficina sanitaria and Miss Catharina F. Lenroot, head of the U. S. children's bureau, were among those present. To secure the cooperation of several international institutions is one of the leading objectives.

The Pan American League for the Control of Cancer will meet in 1942 in Buenos Aires. According to Francis Carter Wood of Columbia University, seventeen American countries are members of this league. A Pan American center for tuberculosis statistics is to be created. Prof. Angel H. Roffo is its president.

Deaths

Prof. Dr. Pedro Rojas, professor of embryology and histology at the faculty of medicine in Buenos Aires and director of the same institute, died on July 7 at the age of 54. He had published a book on the structure of the myocardium.

Prof. Faustino J. Trongé, who had done much for the development of obstetrics in Argentina and who was greatly esteemed in the United States, died at the age of 71 in Buenos Aires.

Dr. Pilares O. Dezeo, professor of Hygiene in the faculty of medicine in La Plata, died in Buenos Aires.

Marriages

SUMPTER WRIGHT HAWKINS, Fort Smith, Ark., to Miss Jane Elizabeth Bleiler of Mount Holly, N. J., at Abington, Pa., October 25.

RICHARD CABOT NAILLING, Union City, Tenn., to Miss Marie Eleanor Dempsey of Centralia, Pa., in Boston, September 30.

JAMES E. REEDER JR., Sioux City, Iowa, to Miss Adella Gordon Badgerow of Daytona Beach, Fla., July 30.

MARCUS B. EMMONS to Miss Lillian Ila Draper, both of Iowa City, in Eldora, Iowa, August 26.

MYRON HENRY BALL, Scranton, Pa., to DR. GLADYS FRIEND of Dupont, September 7.

AARON COBLENZ to Miss Rebecca Tauber, both of New York, October 5.

Deaths

Paul Stilwell McKibben, Ph.D., since 1931 dean and since 1929 professor of anatomy at the University of Southern California School of Medicine, Los Angeles, died, November 11, at the Good Samaritan Hospital, aged 55, following gastric resection for a malignant ulcer at the pylorus. Dr. McKibben was born in Granville, Ohio, March 14, 1886 and graduated from Denison University in Granville in 1906. He received his Ph.D. degree at the University of Chicago in 1911, where he was an assistant in anatomy from 1908 to 1911, an associate in anatomy 1911-1912 and instructor in anatomy 1912-1913. From 1913 to 1927 he was professor of anatomy at the University of Western Ontario Medical School, London, Ont., Canada, and dean from 1919 to 1927, and was associate professor and professor of anatomy at the University of Michigan Medical School, Ann Arbor, from 1927 to 1929. During the World War Dr. McKibben served as first lieutenant in the Army Sanitary Corps and did research work on brain injuries for the Rockefeller Institute for Medical Research and Johns Hopkins University. He was a member of the American Association for the Advancement of Science, the Royal Society of Canada, the American Association of Anatomists and the Society for Experimental Biology and Medicine and the History of Science Society. The University of Western Ontario granted him the degree of doctor of laws in 1928 and Denison University conferred on him the honorary degree of doctor of science in 1936.

George Albert Hendon ✦ Louisville, Ky.; Louisville Medical College, 1894; Hospital College of Medicine, Louisville, 1898; an Affiliate Fellow of the American Medical Association and member of the House of Delegates from 1928 to 1931; professor of surgery at Hospital College of Medicine from 1895 to 1908; professor of surgery at University of Louisville School of Medicine from 1908 to 1923, clinical professor of surgery from 1923 to 1934, head of the department of surgery, 1928-1929, and professor emeritus since 1938; surgeon, Louisville City Hospital and St. Anthony's Hospital; member of the Southern Surgical Association; fellow and one of the founders of the American College of Surgeons; aged 70; died, October 26, of cerebral hemorrhage and arteriosclerosis.

Max Mailhouse ✦ New Haven, Conn.; Yale University School of Medicine, New Haven, 1878; clinical professor of neurology emeritus at his alma mater; president of the Connecticut State Medical Society, 1915-1916; secretary of the state examining board from 1893 to 1900; member of the American Psychiatric Association and the Association for Research in Nervous and Mental Disease; past president of the National Association for the Study of Epilepsy; aged 84; died, October 19, of arteriosclerosis.

Wesley Franklin Kunkle, Williamsport, Pa.; Jefferson Medical College of Philadelphia, 1888; member of the Medical Society of the State of Pennsylvania; past president, secretary and librarian of the Lycoming County Medical Society; for many years school physician; for many years president of the Lycoming County Tuberculosis Society and director of the Pennsylvania Tuberculosis Society; on the staff of the Williamsport Hospital; aged 77; died, October 26, of cerebral hemorrhage.

Louis Klein ✦ Nutley, N. J.; Long Island College Hospital, Brooklyn, 1906; member of the Michigan State Medical Society; in 1935 was appointed director of clinical research of the firm of Hoffmann-La Roche, Inc.; held a similar position with Parke, Davis & Co. in Detroit, where he was on the medical staff of Harper Hospital and was consulting endocrinologist to the Wayne County Juvenile Court; aged 56; died, October 24, at his home in Upper Montclair of coronary thrombosis.

Guy Walter Luckey ✦ Austin, Texas; Barnes Medical College, St. Louis, 1907; director, local health services, Texas State Department of Health, and field director, division of county health units; at one time health officer in Bernalillo County and Albuquerque, N. M., and health officer of Boone County, W. Va.; formerly assistant city health officer, Fort Worth, Texas, and director, division of local health services; aged 58; died, October 30, of cerebral hemorrhage.

William David McDowell, Las Animas, Colo.; College of Physicians and Surgeons, School of Medicine of the University of Illinois, 1901; instructor in medicine from the collegiate year 1901-1902 through the collegiate year 1906-1907 at his alma mater; member of the Illinois State Medical Society; formerly on the staffs of the Garfield and Bethany hospitals, Chicago; aged 79; died, October 13, in the Colorado State Hospital, Pueblo, of senility.

William Sigismund Branner ✦ New Paltz, N. Y.; Medico-Chirurgical College of Philadelphia, 1906; health officer for the village of New Paltz and town of Plattekill; examining physician for the local draft board; on the courtesy staffs of the Kingston City and Benedictine hospitals, Kingston, St. Luke's Hospital, Newburgh and St. Francis and Vassar hospitals, Poughkeepsie; aged 66; died, October 26, of acute myocarditis.

Harry Cushman Willett ✦ Des Moines, Iowa; Rush Medical College, Chicago, 1894; member of the American Academy of Dermatology and Syphilology; on the staffs of the Broadlawns County Hospital, Iowa Methodist Hospital, Iowa Lutheran Hospital and Mercy Hospital; consultant in dermatology, U. S. Veterans Administration; aged 71; died, October 17, in Chevy Chase, Md., of coronary thrombosis.

Karl Albert Connell ✦ Scarsdale, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1900; at one time professor of surgery at the Creighton University School of Medicine, Omaha; served during the World War; fellow of the American College of Surgeons; formerly chief surgeon of the Presbyterian Hospital, Omaha; aged 63; died, October 18, of heart disease.

William Thomas Morrissey ✦ New Britain, Conn.; College of Physicians and Surgeons, Baltimore, 1909; member of the American Academy of Ophthalmology and Otolaryngology; past president of the Hartford County Medical Society; served during the World War; served the New Britain General Hospital in various capacities; aged 59; died, October 23, of coronary thrombosis.

Mark Tad Morgan ✦ Captain, M. C., U. S. Army, retired, Dayton, Ohio; Ohio State University College of Medicine, Columbus, 1929; entered the medical corps of the United States Army as a first lieutenant in 1930 and in 1932 was made a captain; retired for physical disability Aug. 31, 1940; aged 39; was found dead in October at Middletown of carbon monoxide poisoning.

John Joseph Lynch, Washington, D. C.; Georgetown University School of Medicine, Washington, 1925; member of the Medical Society of the District of Columbia; instructor in clinical obstetrics and clinical gynecology at his alma mater; aged 43; died, October 25, of cerebral hemorrhage, arteriosclerosis and essential hypertension.

Joseph A. Lafferty, McKees Rocks, Pa.; Cleveland-Pulte Medical College, Cleveland, 1913; member of the Medical Society of the State of Pennsylvania; served during the World War; on the staff of the Ohio Valley General Hospital; physician for the county draft board; aged 52; died, October 13, of coronary occlusion.

John Julius La Roche Jr., Charleston, S. C.; Medical College of the State of South Carolina, Charleston, 1911; member of the South Carolina Medical Association; associate professor of medicine at his alma mater; aged 53; on the staff of the Roper Hospital, where he died, October 12, of cerebral arteriosclerosis.

Frank Joseph Donigan, Brooklyn; Long Island College Hospital, Brooklyn, 1921; member of the Medical Society of the State of New York; assistant visiting surgeon on the staff of the Coney Island Hospital and associate visiting surgeon at the Caledonia Hospital; aged 43; died, October 19, of coronary thrombosis.

John Franklin Downing, Muncie, Ind.; Medical College of Indiana, Indianapolis, 1897; member of the Indiana State Medical Association; formerly county coroner; served during the World War; on the staff of the Ball Memorial Hospital; aged 67; died, October 18, of chronic nephritis and arteriosclerosis.

Louis Daniel Retz, Walton, N. Y.; Syracuse University College of Medicine, 1920; member of the Medical Society of the State of New York; on the staffs of the Wyckoff Heights Hospital and Bushwick Hospital, Brooklyn; aged 44; died, October 23, of cerebral hemorrhage, arteriosclerosis and hypertension.

William Irenaeus Armstrong, Bellaire, Ohio; Ohio Medical University, Columbus, 1904; member of the Ohio State Medical Association; aged 65; died, October 20, in the Ohio Valley General Hospital, Wheeling, W. Va., of subdural hemorrhage due to cerebral arteriosclerosis.

John Arthur Alvarez ✠ Houston, Texas; Tulane University of Louisiana School of Medicine, New Orleans, 1930; fellow of the American College of Physicians; on the associate staffs of St. Joseph's Infirmary and the Hermann Hospital; aged 36; died, October 19, of fibrosarcoma of the chest wall.

Claude Alphonsus Savage, Fort Wayne, Ind.; University of Louisville School of Medicine, 1922; member of the Indiana State Medical Association; formerly county jail physician; aged 48; for many years on the staff of St. Joseph's Hospital, where he died, October 11, of coronary thrombosis.

Harvey G. Bloom, Oxford, Ind.; Miami Medical College, Cincinnati, 1895; member of the Indiana State Medical Association; formerly county coroner; aged 71; died in October at the St. Elizabeth Hospital, La Fayette, of benign hypertrophy of the prostate and cardiovascular disease.

Reuben Harold Stiehm, Madison, Wis.; Indiana University School of Medicine, Indianapolis, 1926; associate professor of clinical medicine at the University of Wisconsin Medical School; aged 40; was found dead, October 21, of acute dilatation of the heart.

Walter W. Voight ✠ Chicago; Christian-Albrechts-Universität Medizinische Fakultät, Kiel, Prussia, 1904; fellow of the American College of Surgeons; attending gynecologist, St. Joseph's Hospital; aged 62; died, October 25, of coronary thrombosis.

Grant S. Van Horn, Batavia, Ohio; Eclectic Medical Institute, Cincinnati, 1894; member of the Ohio State Medical Association; for many years member of the school board; aged 73; died, October 16, in the Christ Hospital, Cincinnati, of uremia.

Robert Drysdale May ✠ Jacksonville, Fla.; Emory University School of Medicine, Atlanta, Ga., 1917; served during the World War; a member of the local draft board; aged 48; died, October 6, in St. Vincent's Hospital of coronary sclerosis.

Paul Dawson Hanley, Pottstown, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1912; member of the Medical Society of the State of Pennsylvania; on the staff of the Pottstown Hospital; aged 55; died, October 23, of uremia.

John Wiley Ruckman ✠ West Liberty, W. Va.; Eclectic Medical College, Cincinnati, 1910; was college physician for the West Liberty Teachers College; aged 56; died, October 4, in the Ohio Valley Hospital, Wheeling, of coronary thrombosis.

James Russell Young, Pocatello, Idaho; Western Reserve University School of Medicine, Cleveland, 1917; member of the Idaho State Medical Association; fellow of the American College of Surgeons; aged 53; died, October 13, of appendicitis.

Robert Bayard Touchstone, Lytle, Texas; Memphis (Tenn.) Hospital Medical College, 1903; member and vice president of the State Medical Association of Texas; bank president; aged 65; died, October 11, of cerebral hemorrhage.

Charles Edwin Meckstroth, New Knoxville, Ohio; Starling-Ohio Medical College, Columbus, 1914; member of the Ohio State Medical Association; aged 56; died, October 20, in St. Rita's Hospital, Lima, of cerebral embolism.

Robert Russell King, Lancaster, N. Y.; University of Buffalo School of Medicine, 1931; member of the Medical Society of the State of New York; aged 33; died, October 15, in the Buffalo General Hospital of bronchopneumonia.

Albert D. Christian, Ottawa, Ill.; Northwestern University Medical School, Chicago, 1893; member of the Illinois State Medical Society; aged 73; died, October 20, in Mesa, Ariz., of injuries received when struck by an automobile.

Herman Ernest Doege ✠ New Rochelle, N. Y.; Baltimore University School of Medicine, 1901; aged 63; on the staff of the New Rochelle Hospital, where he died, October 24, of peritonitis and ruptured diverticulum of the sigmoid.

Edgar Rae Frankish, Toronto, Ont., Canada; Trinity Medical College, Toronto, 1904; L.R.C.P., L.R.C.S., Edinburgh, Scotland, 1905, and L.F.P.S., Glasgow, 1905; aged 61; died, October 23, of cerebral hemorrhage.

Carl Thomas Arrington ✠ Oklahoma City, Okla.; University of Oklahoma School of Medicine, Oklahoma City, 1930; served during the World War; aged 43; died, October 18, of an accidental overdose of sleeping tablets.

Max Peter Schranck, Twin Falls, Idaho; State University of Iowa College of Medicine, Iowa City, 1931; member of the Idaho State Medical Association; aged 39; died, October 8, in Ann Arbor, Mich., of Addison's disease.

William Franklin Bolton, Vacherie, La.; Medical Department of Tulane University of Louisiana, New Orleans, 1904; member of the Louisiana State Medical Society; aged 67; died, September 22, of coronary thrombosis.

Marion Le Cocq, Portland, Ore; University of Oregon Medical School, Portland, 1924; member of the Oregon State Medical Society; served during the World War; aged 47; died, September 18, of bronchopneumonia.

Edgar Thomas Cecil, Rainelle, W. Va.; Jefferson Medical College of Philadelphia, 1900; member of the West Virginia State Medical Association; aged 65; died, October 10, of cerebral hemorrhage and heart disease.

Theodore Brooks Breck, Cleveland; Western Reserve University Medical Department, Cleveland, 1887; aged 79; on the staff of the Glenville Hospital, where he died, October 15, of uremia and aplastic anemia.

Nils Victor Sandin, Ashland, Wis.; Chicago College of Medicine and Surgery, 1914; on the staffs of St. Joseph's Hospital and the Ashland General Hospital; aged 55; died, October 5, of coronary thrombosis.

Benjamin Lee Ashworth, Marion, N. C.; College of Physicians and Surgeons, Baltimore, 1892; member of the Medical Society of the State of North Carolina; aged 74; died, October 19, of myocarditis.

Joseph Franklin Slade, Stony Creek, Va.; Bellevue Hospital Medical College, New York, 1888; member of the Medical Society of Virginia; aged 79; died, October 14, of cardiovascular disease.

Thomas Lincoln Craig, Davenport, N. Y.; Baltimore University School of Medicine, 1892 and 1893; for many years county coroner and town health officer; aged 76; died, October 17, of myocarditis.

William Brill, Los Angeles; Columbia University College of Physicians and Surgeons, New York, 1887; aged 77; died, October 13, in the California Hospital of hemiplegia and carcinoma of the colon.

Ben Garfield Budge ✠ Ames, Iowa; Northwestern University Medical School, Chicago, 1909; past president of the Story County Medical Society; aged 59; died in October of coronary occlusion.

Frederick Wellington Buck, Washington, D. C.; Central Medical College of St. Joseph, Mo., 1902; served during the World War; aged 68; died, October 24, of lymphosarcoma of the thorax.

Nathaniel S. Word, Camden, Ark.; Memphis (Tenn.) Hospital Medical College, 1900; member of the Arkansas Medical Society; aged 68; died, October 9, of carcinoma of the prostate.

Carl William Ekermeyer, New Bremen, Ohio; Eclectic Medical College, Cincinnati, 1924; member of the Ohio State Medical Association; aged 41; died, October 11, of coronary occlusion.

Joseph Giguere, Worcester, Mass.; School of Medicine and Surgery of Montreal, Que., Canada, 1889; aged 83; died, October 16, in the City Hospital of basal cell carcinoma of the nose.

Abram B. Mosher, Bellemead, N. J.; University of the City of New York Medical Department, New York, 1879; aged 86; died, September 4, of chronic myocarditis and arteriosclerosis.

Samuel Forer ✠ New York; Long Island College Hospital, Brooklyn, 1931; aged 36; on the staff of the Lebanon Hospital, where he died, October 11, of pulmonary embolism.

Louis A. Brandenburger ✠ St. Louis; Marion-Sims College of Medicine, St. Louis, 1899; pathologist for the city coroner's office; aged 65; died, October 5, of carcinoma.

Orrie Lester Marks, Pittsburgh; University of Pittsburgh School of Medicine, 1908; on the staff of St. Joseph's Hospital; aged 60; died, October 9, of coronary occlusion.

Daniel Richard Lucy, Denver; Gross Medical College, Denver, 1896; formerly member of the city council; aged 81; died, October 21, of acute nephritis and myocarditis.

Albert Brueggeman, Cincinnati; Cincinnati College of Medicine and Surgery, 1898; aged 71; died, October 19, in the Good Samaritan Hospital of coronary heart disease.

Telfer Joshua Norman, Vancouver, B. C., Canada; McGill University Faculty of Medicine, Montreal, Que., 1887; aged 78; died recently of carcinoma of the prostate.

Lewis Foster Woodruff, Cedar Rapids, Iowa; State University of Iowa College of Medicine, Iowa City, 1890; aged 79; died, September 29, of coronary occlusion.

Bureau of Investigation

STIPULATIONS

Agreements Between Federal Trade Commission and Promoters of Various Products

The following items are abstracts of stipulations in which promoters of "patent medicines," cosmetics or medical devices have cooperated with the Federal Trade Commission to the extent of agreeing to discontinue certain misrepresentations in their advertising. These stipulations differ from the "Cease and Desist Orders" of the Commission in that such orders definitely direct the discontinuance of misrepresentations. The abstracts that follow are presented primarily to illustrate the effects of the provisions of the Wheeler-Lea Amendment to the Federal Trade Commission Act on the promotion of such products.

Adla Tablets.—As these will not bring about neutralization of hyperacidity, give relief from acid stomach, protect irritated parts or membranes of the stomach in any manner or form a protective coating over the stomach parts or membrane, the Adlerika Company of St. Paul promised the Federal Trade Commission in April 1941 to withdraw these advertising misrepresentations.

A. G. Luebert Preparations.—These are put out by one A. G. Luebert of Coatesville, Pa., who signed a stipulation with the Federal Trade Commission in June 1941. In this he promised to cease representing that "Nox-Em Tablets and Capsules," "Ka-No-Mor Capsules," "Nox-Pan Tablets" and "Luebert's Laxative Tablets" are in all cases safe and harmless and to discontinue any advertisements which fail to reveal that frequent or continued use of these products may be dangerous, causing serious blood disturbances, anemia, collapse or a dependence on them and that they should not be given to children, or that "Luebert's Laxative Tablets" should not be used when abdominal pains, nausea or other symptoms of appendicitis are present; that its frequent or continued use may result in dependence on laxatives and that if a cutaneous rash appears the use of the product should be discontinued. Luebert further agreed to discontinue certain misrepresentations (not named in the stipulation abstract) regarding "Nox-Em Corn Plaster," "Nox-Em Jelly," "Nox-Pan Tablets," "Ka-No-Mor Capsules," "Iron Tonic Tablets" and also misrepresentations as to the alleged value of "Nox-Em Tablets and Capsules," in treating neuritis, gout, sciatica, rheumatism or stiff or sore joints.

Buellene.—In April 1941 S. D. Cates, operating as Buel Company, Chicago, signed a stipulation with the Federal Trade Commission in which he agreed to cease representing that this product is effective in the treatment of falling hair or of dandruff, unless the representation is limited to assistance in the removal of accumulated dandruff scales; that his "Hot Oil Treatments" make the hair healthy or stop brittle, breaking hair or that any of his products is a hair grower.

Chelf's C. C. Compound or C. C. C. C. or 4C's.—This product is put out by Chelf Chemical Company, Richmond, Va., and reported by the Federal Trade Commission to contain, among other ingredients, potassium bromide and acetanilid. In March 1941 the Chelf concern stipulated with the Federal Trade Commission that it would cease representing that this preparation will remove the cause of headaches, indigestion or nervousness or remedy these conditions; that it may be safely used by all persons under all conditions, will not have a depressing effect on the heart and will relieve general colds or head colds, unless this representation is limited to palliative relief of aches and pains accompanying such colds. The concern also agreed to discontinue advertisements which fail to reveal that the product should not be used in excess of the dosage recommended and that its frequent or continued use may be dangerous.

Cheney Products.—The G. S. Cheney Company, Boston, promised the Federal Trade Commission in April 1941 that it would discontinue certain misrepresentations in the sale of "Cheney's Nurve Phosphates," also known as "Cheney's Nerve Phosphates." Among these were that by the use of the words "Nurve" and "Nerve" or similar terms the preparation is represented as having value for bodily ailments caused by nervous disorders; that it is a food or stimulant for the nerves or relieves sleeplessness and fatigue and that its lecithin content will add to the phosphorus constituent of brain and nerve substance. The Cheney concern also agreed to cease representing that "Cheney's Vitamins Complete" is a valuable accessory to one's daily diet, unless the advertising clearly explains that the product is valuable only when there is a deficiency of vitamins and minerals which the Cheney product contains.

Circulin Garlic Pearls.—These are put out by one Fred Miller, trading as the Miko Company, Long Island City, N. Y. In April 1941 Miller promised the Federal Trade Commission that he would cease advertising that this product is rich in body-building materials such as manganese, sodium, calcium, iodine and phosphates, has any value in relieving symptoms of nervousness, dizziness and tiredness in excess of temporarily relieving such symptoms when associated with high blood pressure or is effective in treating coughs, bronchitis or bronchial asthma.

Cliff Edwards No. 7 and No. 11.—These are preparations for the hair put out by Cliff Edwards, who operates as Cliff-Edwards Hair-Way, Los Angeles. In January 1941 he promised the Federal Trade Commission that he would cease representing that these products will cause hair to grow or in any way aid in growing hair on a naturally bald head; that they are new in the sense that they consist of ingredients other than such as have long been recognized for use in scalp treatments, and that they were created by a prominent cosmetologist and dermatologist.

Corn-Go.—This is no longer to be advertised as instantly stopping the pain of corns or calluses, preventing their recurrence, removing bunions or in any way proving of value in their treatment, according to a stipulation signed with the Federal Trade Commission in May 1941 by Benjamin Ingber, trading as Leonard Sales Company, Philadelphia.

Crystal-Sheen, Dandruff Eradicator and Lanoleen.—These are put out by General Beauty Products Company of Chicago, of which Hec Barth, Mrs. Hec Barth and Samuel Barth are co-partners. In May 1941 these persons stipulated with the Federal Trade Commission that they would discontinue certain misrepresentations. They agreed to cease using the name "Crystal-Sheen" or in any other way causing the public to confuse this hair rinse product with a competitive one, "Sparke-Sheen;" to discontinue employing any word as part of the trade name for, or any representation relating to, the product "Dandruff Eradicator," so as to imply that this, when used on the scalp, will eradicate, remove or destroy dandruff or promote hair growth or feed or nourish dry scalps. The Barths also promised to discontinue using as a brand name for their emulsion the word "Lanoleen," or any other phonetic spelling of the word "lanolin," alone or in connection with other words so as to imply that their product is a lanolin product or that its lanolin content is substantial and contributes any value.

Deep-Skin Electro-Mask.—As the Federal Trade Commission ruled that this device will not reestablish natural functions of the underskin, glands, circulation or nervous system, normalize the skin, revitalize the tissues, prove an effective remedy for wrinkles, crow's-feet, enlarged pores, pimples, blackheads, dry or oily skin, accomplish all the benefits of the most extravagant salon facial or constitute a sure means of attaining beauty, the Commisison in April 1941 announced that Inspire, Inc., of San Francisco and its president, Edgar D. Sloat, had signed a stipulation agreeing to withdraw these advertising misrepresentations. They further promised to cease using the words "Deep Skin" as a part of the brand name or representing in any manner that the effect of the device extends deeply into the skin, acts directly on the dermis or acts from the inside outward. In May 1941 the Commission accepted a similar stipulation from Kelso Norman and Louis L. Layne, trading as Kelso Norman Organization, San Francisco, an advertising agency.

Diatest Tester.—This device was represented in the advertising as the only tester that does not use or require flame in determining the sugar count of urine and as the most accurate tester available for determining such sugar content. Accordingly the Federal Trade Commission in April 1941 reported that Alfred Muller, trading as Diatest Laboratories, New York, had signed a stipulation agreeing to withdraw this misrepresentation from his advertising.

Donna Lo Cosmetics.—These are put out by the Donna Lo Laboratories, Inc., St. Louis, which in April 1941 promised the Federal Trade Commission that it would discontinue the following misrepresentations: That these products provide a new kind of skin care, correct skin ailments generally, permit the skin or its pores to breathe, decrease the size of the pores and cause the blood stream to circulate through inactive areas of the face. The concern also agreed to cease representing by use of the brand name "Circulation Emulsion" that this product stimulates circulation, that its "Donna Lo Face Powder" is made in France or from a French formula and that face powder sold by competitors contains ingredients which close or seal the pores of the skin.

Dr. Haines Shoes.—In May 1941 the Superior Shoe Company, Inc., Chicago, stipulated with the Federal Trade Commission that it would cease employing the terms "Doctor" or "Dr." either alone or in connection with a name or with any other words as a trade name, brand or designation for its products so as to imply that they are made in accordance with the design or under the supervision of a physician and contain scientific or orthopedic features which are the result of medical determination or services.

Eldredge's (Dr.) Approved Rectal Jelly.—In April 1941 Alton W. Eldredge, trading as Melrose Eldredge Company, Melrose, Mass. stipulated with the Federal Trade Commission that he would cease representing, by the use of the terms "Doctor," "Dr." or "Approved" as a part of the trade name of this product, that it has the official recommendation of doctors or pharmacists or was formulated by a physician; that it is a cure for hemorrhoids or has any effect on the symptoms of the ailment except to the extent that it may act as an astringent, provide some antiseptic action or afford the soothing effect of an emollient.

Formula X.—This treatment consists of two products, "Formula-X Liquid" and "Formula-X Pomade," put out by Adolph R. Phillips and Daniel B. Scott Jr., trading as Adolph's Beauty Products Company, Philadelphia. In June 1941 the Federal Trade Commission accepted a stipulation from these persons in which they promised to cease advertising that these products will cause the hair to grow or will be of any benefit in treating dandruff and eczema beyond the temporary relief of itching, and that they have any merit in treating falling or brittle hair. Further, they promised to discontinue any advertisements of Formula-X Liquid which fail to reveal that unless used in specified proper dilution it would cause a pronounced local inflammation or other injury.

Grace Donohue Cleanser.—This is put out by Grace Donohue, Inc., of New York, which concern stipulated with the Federal Trade Commission in April 1941 that it would desist from advertising that the product is a healing agent and constitutes an efficient method for preserving a clear, smooth or attractive complexion. The firm also agreed to cease represent-

ing that the product is a remedy or cure for blackheads or whiteheads and is beneficial in the treatment of acne, crow's-feet, lines under eyes or oily or dry skin. The Philip Ritter Company, Inc., of New York, which handles the advertising of the Donohue concern, signed a similar stipulation in June 1941.

Grover Graham Remedy and Graham's Butternut Pills.—In April 1941 the Federal Trade Commission accepted from the S. Grover Graham Company, Inc., Newburgh, N. Y., a stipulation which promised that certain misrepresentations would be discontinued in the sale of these products. According to the stipulation, the word "Remedy" or any similar words as a part of the trade name of "Grover Graham Remedy" were to be withdrawn and the preparation was no longer to be represented as anything more than a treatment to neutralize temporary excessive gastric acidity and to relieve temporarily the pain caused thereby. The concern also stipulated that it would cease advertising that "Graham's Butternut Pills" consist of a vegetable ingredient, without disclosing that it contains only the extract from a vegetable, and that it will discontinue representing that the product is a tonic or is a remedy for any disease or dysfunction or for habitual constipation, headache, biliousness and all disorders arising from inactivity of the liver or torpidity of the bowels. The Hevenor Advertising Agency, Inc., of Albany, N. Y. signed a similar stipulation.

Humania Products.—These are put out by Gustave Goldstein, a hair goods and cosmetic dealer trading as Humania Hair Goods and Specialty Company, New York. In May 1941 Goldstein stipulated with the Federal Trade Commission that he would discontinue advertisements which fail to reveal conspicuously certain dangerous possibilities in the use under certain conditions of "Magic Shaving Powder" and "Kongolene," and which advertisements represent that "Apex Pomento" and "Humania Dandruff Treatment" will prevent dandruff or will do more than remove such of it as has already formed on the scalp, and that "Humania Dandruff Treatment" and "Amron New Hair Aid" will stop hair from falling. On three different dates in 1936 the Commission had ordered the Humania concern to discontinue certain misrepresentations in the sale of its various preparations, specifically mentioning "Magic Shaving Powder," "Ro-Zol Face Bleach" and "Requas Ear Oil."

Kaucky's Formula Herb Tea.—This is put out by one Emanuel Kaucky, trading as Kaucky's Pharmacy, Berwyn, Ill. In April 1941 this person entered into a stipulation with the Federal Trade Commission in which he agreed to discontinue certain advertising misrepresentations. Among these were that the use of this product will cause one to have a clean body or a clear mind; will cause the system to return to normal, relieve rheumatism or have any value in treating headaches beyond affording relief from those due to constipation or that it is worth anything in the treatment of constipation or stomach, intestinal, bladder or kidney ailments in excess of that afforded by a laxative and diuretic.

Locao Belem.—That this product will grow hair or cure baldness, falling hair, dandruff and other scalp disorders, rejuvenate the scalp, stimulate or revitalize hair cells and give new life to hair were misrepresentations that the Belem Products Company, Houston, Texas, promised to withdraw from the advertising, in a stipulation that it signed with the Federal Trade Commission in May 1941.

Lucky Tiger, Lucky Tiger with Oil and Sulpho-Olive Treatment.—These are products of the Lucky Tiger Manufacturing Company, Kansas City, Mo., which stipulated with the Federal Trade Commission in June 1941 that it would cease advertising that either of the two first-named products removes the cause of dandruff or has any value in treating it in excess of temporary removal of loose scales of dandruff; that either of these preparations will permanetly stop scalp itching or, as part of the "Sulpho-Olive Treatment," will reduce or prevent the loss of hair or eliminate scalp disorders and that no competing product will produce like results. The concern further agreed to discontinue the misrepresentations that "Lucky Tiger" removes the cause of or cures dry hair or that "Lucky Tiger with Oil" affects this condition in any other way than by supplementing with oil to relieve it temporarily.

Mack Brothers Products.—In April 1941 Eleanor H. Mack, trading as Mack Brothers Products, San Diego, Calif., promised the Federal Trade Commission that she would cease using the word "Resuscitator" as part of the brand name for her cosmetic preparation "Revel No. 9 Resuscitator Oil" or otherwise representing that the use of this product restores life or the appearance of youth to the skin, and that she would stop employing the phrase "Pore Cleansing" as a part of the brand name of "Revel No. 1 Pore Cleansing" or otherwise representing that it will remove all foreign matter from the pores. Miss Mack also agreed to cease representing that "Revel No. 6 Lipid Cream" is of any appreciable benefit in the treatment of aged or crepey skin and that "Revel No. 16 Mouth Creme" is of value in treating bleeding or receding gums.

Ne-Wa-Te Native Herbs.—That this is an effective treatment for stomach, liver and kidney diseases and other ailments and will help the user to avoid appendicitis, catarrh, fevers, asthma, indigestion and other ailments, except as a purgative or laxative which should be sold with a caution notice, were claims which Oscar F. Fox and W. Harvey Patterson of Greenville, S. C., promised to withdraw from the advertising, in a stipulation that they signed with the Federal Trade Commission in June 1941.

Newbro, Queen and Tuxedo Preparations.—These are put out by the Newbro Manufacturing Company of Atlanta, Ga., which in June 1941 stipulated with the Federal Trade Commission that it would discontinue the following advertising misrepresentations: That "Tuxedo Club Pomade" invigorates the scalp or helps the hair as nothing else will; that "Queen Hair Dressing," also designated as "New Improved Queen Hair Dressing," is a hair grower or supplies food for the hair; that "Queen Instant Skin Whitener," also designated as "New Improved Queen Instant Skin Whitener" and as "Queen Skin Whitener Ointment," improves the tone of the complexion or retards the formation of blackheads; that "Queen Skin Soap," also known as "New Improved Queen Skin Soap," helps to heal skin blemishes; that "Queen Peroxide Vanishing Cream (or "New Improved Peroxide Vanishing Cream") imparts a fine-grained appearance to the skin, and that "Queen Cold Cleansing Cream" loosens impurities or smoothes lines or wrinkles. In September 1941 the Commission announced that Cole and Company, Memphis, Tenn., an agency handling the advertising of the Newbro Concern, had signed a stipulation making similar promises.

Nix Bleach Cream.—In April 1941 P. Edwards, Memphis, Tenn., trading as the Nix Cosmetics Company, stipulated with the Federal Trade Commission that he would cease advertising that this cream affects the skin in a new way or in any way different from that of other preparations. In September 1941 the Commission announced that Cole and Company, Memphis, Tenn., an agency handling the Nix advertising, had signed a stipulation making similar promises.

Nu-Hair.—F. Orlo Johnson, E. B. Masters and Coryell, Inc., all of Detroit, signed a stipulation in April 1941 with the Federal Trade Commission in which they promised to discontinue certain misrepresentations in the sale of "Nu-Hair." The stipulation provided that they would cease using the brand name Nu-Hair in such a way as to imply that it will grow or produce hair; that they would desist from advertising that their product represents the professional secret of a scalp specialist or is a scientific or revolutionary hair, scalp or skin preparation and is capable of preventing, removing or relieving baldness, dry or itchy scalp or of restoring the natural oils of the scalp or of controlling or helping to control the glandular activity of the scalp.

Regulator 68B.—This is put out by one Felix J. Bentz, trading as Dr. Bentz Laboratory, Athol, Mass. In May 1941 Bentz promised the Federal Trade Commission that he would discontinue representing in his advertising that poisons in the blood stream are the result of undigested food stagnating or fermenting in the intestinal tract; that "Regulator 68B" is a blood cleanser; that by its use poisons will be eliminated from the system; that it regulates or stimulates the bowels, liver or digestive system to normal activity or regularity, or that its therapeutic action is other than that of a laxative or cathartic.

Ruth Clark Preparations.—A stipulation was signed with the Federal Trade Commission in May 1941 by Ruth Clark, trading as Ruth Clark's Products, Los Angeles. In this she promised to cease representing, through the use of the word "Vitamin" or the abbreviation "Vit" in connection with the letter "A" in the brand name of her products "Vit-A-Pac," "Vitamin 'A' Beauty Cream" and "Vit-A-Hair and Scalp Oil," that their vitamin A content has any beneficial effect on the skin, hair or scalp or that she manufactures or compounds all the products which she sells; that her "Re-Chemicalizing Bouillon" is of value in the relief, treatment or correction of arthritis, neuritis, colds, nervousness or skin troubles or as a reducing aid of itself or when combined with "Blendavita Tea," or that the "Bouillon" has value in treating or correcting anemia or an underweight condition in excess of the benefits that may accrue from its food elements, or that it will "rechemicalize" the system; that "Blendavita Tea" is of any value in treating kidney, bladder or skin ailments, or insomnia, or acts as an alkalizing agent; that "Oils of Youth" will keep the body internally clean, or that "Vitamin 'A' Concentrate" would be valuable to persons suffering from frequent colds, sinus trouble or skin infections, unless the claims reveal that it would be helpful only in cases of vitamin A deficiency.

Sheer Mold Reducing Girdle.—In June 1941 the Federal Trade Commission accepted from the LaVel Company, trading as Sheer Mold Company of Hollywood, Calif., and the General Advertising Agency, Inc., of Los Angeles a stipulation that they would discontinue certain misrepresentations in the advertising of the girdle. They agreed to cease using the word "Reducing" as part of the trade name of the product and any words similar to "reducing" as descriptive of the girdle or of the results it is supposed to produce, which terms imply that the wearing of this garment will cause a reduction of local or bodily tissues or will effectively remove fat. These concerns admitted in the stipulation that though the wearing of this garment may change physical appearance by compressing that portion of the body about which it is placed, it will not effectively remove fat.

Slumber Ointment.—Frank D. Seiple, operating as The Nolan Company, Greenville, Pa., promised the Federal Trade Commission in May 1941 that he would cease advertising that this product is a competent treatment for ringworm in all cases or in any cases except those involving superficial ringworm infection, and that it is a remedy for athlete's foot unless expressly limited to superficial organisms and the relief of itching; that it is of any value in treating eczema, salt rheum, grease and rubber poisoning, cutaneous diseases or general poisoning beyond giving temporary relief from the itching which may accompany these conditions.

Vev.—In May 1941 the Federal Trade Commission accepted a stipulation from R. V. Annen, trading as General Vitamins Company, Chicago. In this he agreed to cease representing that "Vev" is a vitamin laxative or contains vitamins sufficient to have any therapeutic or dietetic effect. Annen also agreed to cease representing, by use of the words "end" and "eliminate" or similar ones, that his product is a remedy for constipation or is of any value in treating this condition beyond that of affording temporary relief from its symptoms. He further stipulated, among other things, that he would cease disseminating advertisements which fail to reveal that his product should not be used when abdominal pain or other symptoms of appendicitis are present, and that its frequent or continued use may result in dependence on laxatives.

Correspondence

SENSITIVITY TO SULFATHIAZOLE

To the Editor:—Continuing the report of Dr. Merritt H. Stiles of Philadelphia on the hypersensitivity to sulfathiazole, which appeared in THE JOURNAL, October 18, page 1378, I would like to join him in reporting symptoms at variance with the statement of Wein and Lieberthal (THE JOURNAL, September 6, page 850), in which they report only nausea and vomiting following the administration of sulfathiazole. In checking my records on the last 50 patients to whom this drug has been given in the standard dosage of different drug houses of 7.7 grain (0.5 Gm.) tablets varying from 3 to 10 tablets in twenty-four hours, I find that 6 of the patients in addition to nausea and vomiting had temperatures ranging from 102 to 104 F. and 3 of these also had a distinct cutaneous rash. These symptoms appeared after the drug had been stopped for a few days and resumed again. The symptoms appeared within the first twenty-four hours after the resumption of this medication. The symptoms subsided at once when the drug was stopped and the fever and other symptoms reappeared a few hours after the drug was resumed. Not having seen previous reports of the hypersensitivity of this drug, especially the febrile and cutaneous manifestations, I was at a loss to understand it. But since others are now reporting it and since it is evidently not generally known, I feel that my small series of cases shows a sufficiently high percentage of these complications to warrant recording, so that all facts and complications encountered with this relatively new medicament will be widely disseminated. Undoubtedly it is a wonderful and potent drug, but it evidently needs some slight change, alteration or refinement to eliminate the factor or factors causing these apparent hypersensitive symptoms.

PAUL R. STALNAKER, M.D., Houston, Texas.

HEALTH AND THE DOCTORS

To the Editor:—I wish to comment on an item under current comments on page 1269 of THE JOURNAL October 11.

The part which quotes the last paragraph of "Health and the Doctors," is excellent. This is the exact attitude that I have always hoped organized medicine would take. The use of "the technic of scientific experimentation to determine the actual values before general adoption" is clearly indicated.

During the past five years, I have tried to study at first hand the various forms of payment plans—both those which offer indemnification in cash and those which offer indemnification in service. Naturally I have formed certain opinions as to the effectiveness of various patterns. I am convinced that there is one very important major consideration, as yet neglected, that the "technic of scientific experimentation" will uncover, namely that payment plans will not assume major scientific and social importance until they become implements for the rational practice of health conservation and preventive medicine. When they are used to provide a method for paying physicians on a "private" and personal basis to keep the incidence and severity of disease among individuals and families at the lowest possible level, then and then only will they accomplish worth while results.

I am convinced that prepayment is a necessity in such a program because the public is not as yet well enough educated in the benefits of prevention to be willing to purchase it on a fee-for-service basis. Just what form of prepayment will do this the best I am sure I do not know at this time. However I am sure that the various types ought to be under constant scrutiny from authoritative and impartial sources and all interested should be kept posted on current progress.

KINGSLEY ROBERTS, M.D., New York.
Medical Director, Medical Administration Service.

POSSIBLE HAZARD IN USE OF OILED SILK BIB

To the Editor:—Believing that the oiled silk baby bib presents a real hazard, I submit the following report:

Susan Fuller, aged 6 months, in perfect health, was lying awake in her bed, wearing an oiled silk bib. Something prompted the mother to go upstairs to take her a toy and she found the wet bib draped over the baby's face plastered against the mouth and nostrils. Respirations had ceased and the baby was apparently dead; she was rushed across the street to my office and found to be limp, her hands were cyanotic, her face and forehead were blotchy and there was bloody froth drooling from the nostrils and mouth. Artificial respiration succeeded in reviving her; except for a few spells of coughing up mucus, her recovery was uneventful and complete.

It is suggested that, if this type of bib is used, it should be pinned to the shirt.

CURTIS M. GALT, M.D., Manteca, Calif.

HAZARDS OF FIREWORKS ON CHRISTMAS AND NEW YEAR HOLIDAYS

To the Editor:—The American Medical Association has the gratitude of all who are laboring for adequate legislative control of fireworks. Your contribution in the form of the "Annual Survey of Fourth of July Accidents" is perhaps the most helpful and influential aid we have in bringing about the adoption of adequate state fireworks laws throughout the country.

The survey does have, however, one important limitation which actually tends to make more difficult the efforts to extend fireworks laws in a large section of the country. This is simply that the survey covers only the period shortly before and after Independence Day, while, in the South, fireworks are used much more extensively in the celebration of Christmas and New Year's Day. The result is that any accounting of fireworks accidents resulting from Independence Day celebrations only places the Southern states in a very favorable position as compared to their northern and western neighbors, where fireworks celebration of July Fourth is traditional and where celebration of Christmas and New Year's Day with fireworks is relatively unknown. Thus the "Annual Survey of Fireworks Accidents" in its present form may be presented in certain Southern states by the fireworks interests to show that any legislative control of this hazard is apparently unwarranted.

I feel sure that a record of fireworks accidents occurring at the time of the Christmas and New Year holidays in say a dozen Southern states would reveal the true fireworks hazard in these states and greatly facilitate efforts to reduce these accidents through proper legislative control of fireworks. We would request that the American Medical Association make such a survey during the coming holidays and suggest that the survey include the states of Virginia, Kentucky, Missouri, Tennessee, North and South Carolina, Georgia, Alabama, Mississippi, Arkansas and Louisiana.

PERCY BUGBEE, Boston.
General Manager, National Fire Protection Association.

FORMULA FOR SULFATHIAZOLE OINTMENT

To the Editor:—In the article "Sulfathiazole Ointment in the Treatment of Cutaneous Infections," which appeared in THE JOURNAL, October 25, we suggested as an ointment base for the sulfathiazole equal parts of hydrous wool fat and vanishing cream.

We recently have been preparing the ointment as follows: sulfathiazole 5 per cent, aquaphor (cholesterinated petrolatum) 25 per cent and cold cream 70 per cent.

We believe that the ointment base prepared with aquaphor and cold cream is more satisfactory than the ointment base prepared with hydrous wool fat and vanishing cream.

EDMUND L. KEENEY, M.D., Baltimore.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

ANNUAL CONGRESS ON MEDICAL EDUCATION AND LICENSURE

CHICAGO, Feb. 16-17, 1942. Council on Medical Education and Hospitals, Sec., Dr. William D. Cutter, 535 North Dearborn Street, Chicago.

MEDICAL CORPS, UNITED STATES NAVY

Examination. Assistant Surgeon with the permanent rank of Lieutenant (junior grade) and Acting Assistant Surgeon with the probationary rank of Lieutenant (junior grade), Jan. 5-9. Examination will be held at the Naval Hospitals at Chelsea, Mass., Newport, R. I., Brooklyn, Philadelphia, Norfolk, Va., Charleston, S. C., Pensacola, Fla., Corpus Christi, Tex., San Diego and Mare Island, Calif., Puget Sound, Wash., Great Lakes, Ill., Pearl Harbor, T. H., and Naval Medical Center, Washington, D. C. Apply Bureau of Medicine and Surgery, Navy Department, Washington, D. C.

BOARDS OF MEDICAL EXAMINERS
BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of boards of medical examiners and boards of examiners in the basic sciences were published in THE JOURNAL, November 22, page 1808.

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: Parts I and II. Various centers, Feb. 9-11. Part III. Boston, November. Exec. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF ANESTHESIOLOGY: *Written. Part I.* Various centers, March 31. Final date for filing application is Dec. 31. Sec., Dr. Paul M. Wood, 745 Fifth Ave., New York City.

AMERICAN BOARD OF INTERNAL MEDICINE: *Oral.* April in advance of the meeting of the American College of Physicians and June, in advance of the meeting of the American Medical Association. Applications should be on file 6 weeks in advance of the date of oral examination. Sec., Dr. William S. Middleton, 1301 University Ave., Madison, Wis.

AMERICAN BOARD OF NEUROLOGICAL SURGERY: New York, June. Sec., Dr. R. Glen Spurling, 404 Brown Bldg., Louisville.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: *Written. Part I. Group B.* Various centers, Jan. 3. *Oral. Part II. Groups A and B* Atlantic City, May or June. Final date for filing application is March 1. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

AMERICAN BOARD OF OPHTHALMOLOGY: *Written.* March 7. Final date for filing application is Dec. 1. Sec., Dr. John Green, 6830 Waterman Ave., St. Louis.

AMERICAN BOARD OF OTOLARYNGOLOGY: *Oral and Written. All Groups.* Philadelphia, June, preceding the meeting of the American Medical Association. Final date for filing application is March 1. Sec., Dr. W. P. Wherry, 1500 Medical Arts Bldg., Omaha, Neb.

AMERICAN BOARD OF PATHOLOGY: St. Louis, March 30-31. Final date for filing application is Jan. 30. Sec., Dr. F. W. Hartman, Henry Ford Hospital, Detroit.

AMERICAN BOARD OF PEDIATRICS: *Oral.* Philadelphia, March 30-31, preceding the Region I meeting of the American Academy of Pediatrics. Los Angeles, April 22, preceding the Region IV meeting of the American Academy of Pediatrics. Cleveland, May 13, preceding the Region III meeting of the American Academy of Pediatrics. *Written.* Locally, February 14. Sec., Dr. C. A. Aldrich, 707 Fullerton Ave., Chicago.

AMERICAN BOARD OF RADIOLOGY: *Oral. All Groups.* Atlantic City, June 4. Final date for filing application is April 1. Sec., Dr. Byrl R. Kirklin, 102-110 Second Ave., S. W., Rochester, Minn.

AMERICAN BOARD OF UROLOGY: *Written.* Various centers, December. Sec., Dr. Gilbert J. Thomas, 1009 Nicollet Ave., Minneapolis.

Pennsylvania July Report

The Pennsylvania State Board of Medical Education and Licensure reports the examination for medical licensure held at Philadelphia and Pittsburgh, July 8-10, 1941. The examination covered 5 subjects and included 50 questions. An average of 75 per cent was required to pass. Four hundred and fifteen candidates were examined, 399 of whom passed and 16 failed. The following schools were represented:

School	PASSED	Year Grad.	Number Passed
College of Medical Evangelists		(1941, 2)	2
George Washington University School of Medicine		(1940, 3)	3
Georgetown University School of Medicine		(1939), (1940, 5)	6
Howard University College of Medicine		(1940, 2)	2
Loyola University School of Medicine		(1941)	1
Northwestern University Medical School		(1941)	1
Rush Medical College		(1939)	1
University of Chicago, The School of Medicine		(1939), (1940)	2
Indiana University School of Medicine		(1939), (1940)	2
University of Louisville School of Medicine		(1940)	1
Baltimore Medical College		(1907)	1
Johns Hopkins University School of Medicine		(1938), (1939)	2
University of Maryland School of Medicine and College of Physicians and Surgeons		(1940, 2)	2
Harvard Medical School		(1938, 2), (1940)	3
University of Michigan Medical School		(1940)	1
University of Minnesota Medical School		(1940)	1
St. Louis University School of Medicine		(1940, 2)	2
University of Nebraska College of Medicine		(1939), (1940)	2
Cornell University Medical College		(1940, 2)	2
Long Island College of Medicine		(1940)	1
Syracuse University College of Medicine		(1940, 2)	2
University of Buffalo School of Medicine		(1904)	1
Univ. of Rochester School of Medicine and Dentistry		(1940)	1
Ohio State University College of Medicine		(1940)	1
Western Reserve University School of Medicine		(1940)	1
Hahnemann Medical College and Hospital of Philadelphia		(1939, 5), (1940, 56), (1940)*	62
Jefferson Medical College of Philadelphia		(1938, 3), (1939, 24) (1940, 51)	78
Temple University School of Medicine		(1939, 22), (1940, 39)	61
University of Pennsylvania School of Medicine		(1938), (1939, 33), (1939),* (1940, 45)	80
University of Pittsburgh School of Medicine		(1940, 42)	42
Woman's Medical College of Pennsylvania		(1936), (1939, 2), (1940, 7)	10
Medical College of the State of South Carolina		(1940, 2)	2
Meharry Medical College		(1940)	1
Medical College of Virginia		(1939,3), (1940)	4
University of Toronto Faculty of Medicine		(1940)	1
University of Western Ontario Medical School		(1940)	1
McGill University Faculty of Medicine		(1940, 3), (1940)*	4
Medizinische Fakultät der Universität Wien		(1925), (1933, 2), (1934), (1936), (1938)	6
Deutsche Univ. Medizinische Fakultät, Prag		(1934), (1939)	2
Rheinische Friedrich-Wilhelms-Universität Medizinische Fakultät, Bonn		(1934)	1

School	FAILED	Year Grad.	Number Failed
Hahnemann Medical College and Hospital of Philadelphia		(1940, 7)	7
Temple University School of Medicine		(1940, 2)	2
Meharry Medical College		(1940)	1
Magyar Királyi Pázmány Petrus Tudományegyetem Orvosi Fakultasa, Budapest		(1939)	1
Regia Università degli Studi di Bologna. Facoltà di Medicina e Chirurgia		(1938)	1
Regia Università degli Studi di Messina. Facoltà di Medicina e Chirurgia		(1937)	1
Regia Università degli Studi di Roma. Facoltà di Medicina e Chirurgia		(1938), (1939)	2
Regia Università di Napoli Facoltà di Medicina e Chirurgia		(1939)	1

Thirty-eight physicians were licensed to practice medicine by reciprocity and 18 physicians so licensed on endorsement of credentials of the National Board of Medical Examiners from February 10 through September 25. The following schools were represented:

School	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Georgetown University School of Medicine		(1934)	Maryland
Howard University College of Medicine		(1932)	Virginia
Northwestern University Medical School		(1935)	Illinois
University of Illinois College of Medicine		(1917)	Illinois
University of Maryland School of Medicine and College of Physicians and Surgeons		(1927)	West Virginia, (1931) New York
Tufts College Medical School		(1932)	Maine
Univ. of Michigan Medical School		(1926), (1931), (1933)	Michigan
Columbia University College of Physicians and Surgeons		(1919), (1925), (1936)	New York
Cornell University Medical College		(1906)	New York
University and Bellevue Hospital Medical College		(1934)	New York
Syracuse University College of Medicine		(1911)	Maine
University of Buffalo School of Medicine		(1936)	New York
Ohio State University College of Medicine		(1931), (1932)	Ohio
Hahnemann Medical College and Hospital of Philadelphia		(1920)	Delaware, (1934), (1938) New Jersey, (1937) New York, (1940) Maryland
Jefferson Medical College of Philadelphia		(1932), (1935)	New Jersey, (1937) Minnesota, (1940) Maryland
Temple University School of Medicine		(1939)	New Jersey
University of Pennsylvania School of Medicine		(1934)	New Jersey, (1935) Missouri, (1939) Maryland
Meharry Medical College		(1937)	Tennessee
Baylor University College of Medicine		(1923)	New York
University of Texas School of Medicine		(1932)	Texas
Medical College of Virginia		(1926)	Virginia
University of Virginia Department of Medicine		(1938)	Virginia
Marquette University School of Medicine		(1938)	Ohio

School	LICENSED BY ENDORSEMENT	Year Grad.
University of Colorado School of Medicine		(1939)
University of Louisville School of Medicine		(1938)
Johns Hopkins University School of Medicine		(1934)
University of Maryland School of Medicine and College of Physicians and Surgeons		(1940)
Tufts College Medical School		(1936)
Creighton University School of Medicine		(1940)
New York Medical College and Flower Hospital		(1937)
New York Medical College, Flower and Fifth Avenue Hospitals		(1939)
University of Buffalo School of Medicine		(1936)
Duke University School of Medicine		(1940)
Jefferson Medical College of Philadelphia		(1939)
Temple University School of Medicine		(1940, 2)
University of Pennsylvania School of Medicine		(1940)
University of Pittsburgh School of Medicine		(1940)
University of Tennessee College of Medicine		(1934)
University of Vermont College of Medicine		(1928), (1940)

* Licenses have not been issued.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Foods: Liability for Illness Attributed to Drinking Liquid Containing Decomposed Spider.—In 2 very similar cases decided by the court of appeal of Louisiana, the plaintiffs sued bottling companies to collect damages for injuries alleged to have resulted from drinking Coca-Cola containing decomposed spiders.

In the Hollis case, the plaintiff, after drinking a portion of the contents of a bottle of Coca-Cola, felt some foreign substance pass into her mouth. It was a slightly decomposed black widow spider. The plaintiff received prompt medical attention but was nevertheless ill for an extended period of time. The medical evidence, as described by the court, was as follows:

> According to the medical evidence in the record, the symptoms possessed by plaintiff are also produced, but in a more severe form, by the bite of a black widow spider. Dr. Chambers, who was the family physician, was unable to state whether or not they were the direct result of poison from such insect that was swallowed. He was definitely of the opinion, however, that her illness was brought about by the spider's presence in the drink, for, as stated by him, "she was not sick before she took it, and she got sick, and so acutely, afterwards."
>
> The defense expert, Dr. A. G. McHenry, was of the belief that poison from a spider, if swallowed, would be destroyed by gastric juices and enzymes of the stomach, and no pernicious infection would result therefrom. He attributed the symptoms possessed by plaintiff to the experiencing of her menopause, and to other causes. By the latter phrase was meant "from having taken something that she regarded unclean in her mouth"; and he thought that shock and unpleasantness, such as would superinduce vomiting or nausea of different degrees of severity in different individuals, attended the taking. It was his opinion, however, that "a normal individual should be over the effects in a week."

The plaintiff obtained a judgment in the trial court and the defendant appealed to the court of appeal of Louisiana, second circuit.

In the Jenkins case, the plaintiffs, husband and wife, had also purchased bottles of the drink in a local drug store. Immediately after the wife's first swallow, taken through a straw, she became ill and nauseated. She was taken to a physician for treatment and subsequently recovered. In the physician's office, some thirty minutes after the wife had taken her first sip of Coca-Cola, the contents of the bottle were examined. They were found to contain portions of two disintegrated spiders of unstated variety. The medical evidence in this case, as described by the court, was as follows:

> Dr. Ward testified that he examined Mrs. Jenkins shortly after she came upstairs and found rigidity of her abdominal muscles, raising of her eyebrows and nausea. Jenkins and his wife, without being asked by the doctor, told him that they had been drinking coca cola. This shows clearly that they then suspected that the coca cola had caused Mrs. Jenkins' illness, or else they wanted Dr. Ward to suspect this as a cause, and yet, despite this knowledge on their part, the husband was insisting on his wife drinking more of this coca cola to settle her stomach. Some thirty minutes after Jenkins and his wife had been in the doctor's office (during all of which time the bottle had been in the possesion of Mr. Jenkins and had been uncapped since it was first opened in the drug store) Dr. Ward poured out the contents of the bottle into a pan and found what to him looked like portions of two disintegrated spiders which appeared to have been in the bottle for some time.
>
> While Dr. Ward described Mrs. Jenkins' symtoms as those of a spider bite, except for the vomiting, he could not say that her illness was caused from anything she drank from the bottle nor from any poisonous substance. He expressed the opinion that a person could absorb poison by swallowing a spider, yet he was not sure of this as he had had no experience along that line. Mr. C. L. Clay, a toxicologist employed by the State Health Department, testified that, in his opinion, the swallowing of part of a spider would not cause the symptoms which Mrs. Jenkins had; that the poison or venom of a spider, if swallowed, would be digested as other food and would not get into the circulatory system unless there was some cut or abrasion in the mouth, throat or stomach through which it could be absorbed.

From an adverse judgment in the trial court, the plaintiffs appealed to the court of appeal of Louisiana, first circuit.

In the Hollis case, the court of appeal said that the manufacturer of bottled beverages is chargeable with knowledge of the contents of the bottles it sells for public consumption and that if ill effects follow the drinking of such contents the manufacturer is liable for injuries which result. The court further said, however, that the plaintiff was required to prove that her injuries were the proximate result of the defendant's acts and that such proof should be carefully scrutinized because the manufacturer usually has no eye witnesses to the occurrence. The court concluded that the evidence clearly showed that the bottle had not been tampered with before it was purchased by the plaintiff. Coca-Cola becomes flat a short time after the cap is removed because of the loss of carbon dioxide. The plaintiff testified that it was sparkling when she started to drink. The court of appeal, therefore, held that the plaintiff had sustained her burden of proof and affirmed the judgment in her favor.

In the Jenkins' case, the court said that the plaintiff was required to prove with certainty that the bottle contained some deleterious substance, that the substance did not get into the bottle after it left the defendant's plant and that the plaintiff swallowed some of the substance and that it made her sick. The evidence showed, the court pointed out, that the plaintiff told her husband after one swallow that she thought the Coca-Cola was making her sick but that she continued to take two or three more swallows after that. Though she became nauseated, neither she nor her husband complained to the drug clerk that her sickness was caused by something in the bottle. Finally, the court found that the bottle had been uncapped and in the husband's possession for at least half an hour before its contents were poured out and examined. The court considered it unreasonable to believe that the wife could have gotten enough poison to cause her illness in view of the fact that she drank only through a straw which would have prevented her from drawing in any but the smallest particles of a foreign substance. The court of appeal was of the opinion that the plaintiffs had failed to prove by clear and convincing evidence that the wife's illness was actually due to the drink, and the judgment for the defendant was accordingly affirmed.—*Hollis v. Ouachita Coca-Cola Bottling Co., Ltd., 196 So. 376 (La., 1940); Jenkins v. Bogalusa Coca-Cola Bottling Co., Ltd., 1 So. (2d) 426 (La., 1941).*

Federal Food, Drug and Cosmetic Act: Allegedly False Advertising Not Accompanying Actual Shipment of Product as Misbranding.—The defendant shipped certain vitamin products in interstate commerce. Apparently, separate and apart from the actual shipment of the vitamin products, the defendant sent to distributors of those products certain literature and advertisements, allegedly falsely representing that the products would cure a list of stated human ailments, which by the directions of the defendant the distributors were to place on their walls and shelves in proximity to the vitamin products offered for sale. The United States government, alleging that the literature and advertisements so separately shipped constituted misbranding of the vitamin products in violation of the Federal Food, Drug and Cosmetic Act, sought to enjoin the defendant from shipping such allegedly misbranded products in interstate commerce.

The government and the defendant stipulated that prior to the trial of the action the trial court should determine whether or not certain paragraphs of the bill of complaint, which paragraphs alleged facts substantially as noted, state a claim on which relief can be granted as against the defendant. Consequently, the sole question for the determination of the trial court, the district court, eastern district, Wisconsin, was whether the act of bringing written, printed or graphic matter containing false and misleading therapeutic claims in the presence of, proximity of or in association with an article, after shipment in interstate commerce, was a misbranding of that article within the meaning of the term "misbranding," as the term is used in the Federal Food, Drug and Cosmetic Act. That act, the court pointed out, provides in section 352(*a*) that a drug is deemed misbranded if its labeling is false or misleading in any particular, and section 321(*m*) defines labeling to mean "all labels and other written, printed or graphic matter (1) upon any article or any of its containers or wrappers, or (2) accompanying such article." In determining, said the court, the intent of Congress in enacting the two subsections just noted, the legislative history of the act in question should be considered.

The bill which on enactment became the Federal Food, Drug and Cosmetic Act, as introduced gave jurisdiction for its enforcement to the Department of Agriculture. While the bill was pending and possibly because of the desire of the Federal Trade Commission to enforce any provisions as to false advertising, a separate measure was passed (Public Act No. 447, 52 Stat. 111, 15 U. S. C. A., section 41) specifically giving jurisdiction over false advertising of foods, drugs and cosmetics to the Federal Trade Commission. Thereafter the Federal Food, Drug and Cosmetic Act was enacted giving jurisdiction to the Department of Agriculture to enforce the provisions as to adulteration, packaging and labeling, but the enforcement as to false advertising remained in the Federal Trade Commission. As this action was brought under the Federal Food, Drug and Cosmetic Act this court cannot here be concerned with any false advertising by the defendant, and the sole question to be determined is whether or not there was a misbranding by false or misleading labeling. The government necessarily contends for an extremely broad interpretation of the language of the act defining labeling, as noted. The government argues that when Congress said "accompanying such article," in section 321(*m*), which reads, in part, "The term 'labeling' means all labels and other written, printed, or graphic matter . . . (2) accompanying such article," it did not necessarily mean accompanying in the ordinary sense of the word as long as the literature eventually came together with the products before or when offered for sale. Congress, continued the court, did intend that labeling should be something more than the printed or written matter actually affixed to the article itself. It undoubtedly had in mind the practice of manufacturers of placing circulars and printed matters in cartons, which literature would not be affixed to the product to be sold. However, it would be a case of legislation by judicial construction to say that literature "placed on shelves, display counters, or in window displays" comes within the definition of labeling. It is advertising, pure and simple. The Congress could have provided that all written or printed matter displayed near or in proximity to the article was labeling; but it did not do so. Suppose the defendant provided a sign, extolling the virtues of his product, to be hung on the wall. Under the construction contended by the government, it could be considered labeling. What about a billboard across the street? At what point could a line be drawn where labeling would end and advertising begin? In view of the fact that Congress decided that evils in the field of advertising as to foods, drugs and cosmetics were to be handled by the Federal Trade Commission and the Federal Food, Drug and Cosmetic Act was therefore amended accordingly, there is no justification for any court to put a strained and unnatural construction on the term "labeling." Furthermore the Federal Food, Drug and Cosmetic Act is a criminal statute. Statutes creating and defining crimes are not to be extended by intendment because the court thinks the legislature should have made them more comprehensive. In the opinion of the court, therefore, the material paragraphs in the bill of complaint did not state a claim against the defendant on which relief could be granted.—*United States v. Lee, 40 F. Supp. 801 (Wis., 1941).*

Hospitals: Res Ipsa Loquitur as Applied to Ailment Following Childbirth.—The plaintiff sued the defendant hospital, alleging that after she was admitted to the hospital to be delivered of a child "twilight sleep" was administered and that while she was in the delivery room, unconscious, unknown agents and employees of the hospital negligently permitted portions of her body to strike against some unknown substance, thus causing, as she ascertained when she regained consciousness, two or three knots or sore spots on her head, severe headaches and soreness in her arms to the extent that she temporarily lost their use. At the trial, the patient's private physician, who had delivered her, stated that while she was in the delivery room she did not fall off the delivery table or bump her head and that nothing had happened or could have happened in the delivery room to account for her complaints. The knots, or sore spots, on her head, he testified, were not the result of an injury, since "to be from an injury there must be a clot under the scalp," and in his treatment of the plaintiff he saw no such clot but observed a secretion which is found in an eczema "which can come from some infection; and sometimes they just come without any provocation." In his opinion, "the trouble he found on her head was an eczema." The soreness in her arms he attributed to her grasping, while unconscious, handles provided in the delivery room for such patients "to pull on." Relatives of the plaintiff testified as to their presence in the patient's room from the time she was returned from the delivery room until she regained consciousness and that in that period she did not fall out of bed or bump her head. At the conclusion of the plaintiff's case the trial court granted a nonsuit and the plaintiff, in effect, appealed to the court of appeals of Georgia, division 1.

The plaintiff apparently argued on appeal that the action of the trial court in granting a nonsuit was improper because the doctrine of res ipsa loquitur was applicable under the circumstances—that is, from the facts here present an inference of negligence on the part of the hospital should have been drawn. We do not think the doctrine of res ipsa loquitur, said the court, is applicable to the facts of this case. Consequently proof that three knots arose on the head of the patient after she became an inmate of the hospital, that she was unconscious a part of the time, that she suffered a severe pain in her head after the birth of the child and that she temporarily partially lost the use of her arm would not, without more, establish the fact that the hospital was negligent in allowing the patient's head to strike something, such as a part of the bed or the floor. Especially is this so when the plaintiff's physician gave it as his professional opinion that the knots were the result of eczema, that among other things the fluid which came out of the knots was not such as would have come from them had they been caused by a blow, and that they were not the result of a blow or any injury, that the headaches complained of frequently followed childbirth and, in his opinion, were not the result of a blow, and that the trouble involving the arm was common in childbirth cases and was not the result of any injury. As was said in *Georgia Ry. & El. Co.* v. *Harris,* 1 Ga. App. 714, 57 S. E. 1076, 1077:

> When the party upon whom the burden of an issue rests seeks to carry it, not by direct proof, but by inferences, he has not, in this reasonable sense, submitted any evidence for a jury's decision until the circumstances he places in proof tend in some proximate degree to establish the conclusion he claims; and for this the facts shown must not only reasonably support that conclusion, but also render less probable all inconsistent conclusions.

Applying this rule to the facts in this case, we do not think that, admitting the circumstances proved and all reasonable deductions therefrom, the plaintiff showed any negligent conduct on the part of the hospital as alleged in her petition. The court of appeals accordingly held that the trial court had not erred in granting a nonsuit and affirmed the judgment in favor of the hospital.—*White v. Executive Committee of Baptist Convention, 16 S. E. (2d) 605 (Ga., 1941).*

Society Proceedings

COMING MEETINGS

Annual Congress on Industrial Health, Chicago, Jan. 12-13. Dr. C. M. Peterson, 535 North Dearborn St., Chicago, Secretary.

American Academy of Orthopedic Surgeons, Atlantic City, N. J., Jan. 11-15. Dr. Rexford L. Diveley, 1103 Grand Ave., Kansas City, Mo., Secretary.

National Society for the Prevention of Blindness, New York, Dec. 4-6. Mrs. Eleanor Brown Merrill, 1790 Broadway, New York, Executive Director.

Puerto Rico, Medical Association of, Santurce, Dec. 11-14. Dr. David E. Garcia, P. O. Box 3866, Santurce, Secretary.

Radiological Society of North America, San Francisco, Dec. 1-5. Dr. Donald S. Childs, 607 Medical Arts Bldg., Syracuse, N. Y., Secretary.

Society for the Study of Asthma and Allied Conditions, New York, Dec. 6. Dr. W. C. Spain, 116 East 53d St., New York, Secretary.

Society of American Bacteriologists, Baltimore, Dec. 29-31. Dr. I. L. Baldwin, Agricultural Hall, University of Wisconsin, Madison, Wis., Secretary.

Southern Surgical Association, Pinehurst, N. C., Dec. 9-11. Dr. E. Alton Ochsner, 1430 Tulane Ave., New Orleans, Secretary.

Western Surgical Association, St. Paul, Dec. 5-6. Dr. Arthur R. Metz, 2449 Washington Blvd., Chicago, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1931 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

Alabama State Medical Assn. Journal, Montgomery

11:81-116 (Sept.) 1941

Endocrine Therapy as Applied to Gynecology. R. W. TeLinde, Baltimore.—p. 81.
*Novocain Sympathetic Block Method of Therapy in Thrombophlebitis. M. DeBakey and A. Ochsner, New Orleans.—p. 87.
*Management of Patients with Appendicitis, with Special Reference to Those with Perforation. C. N. Carraway, Birmingham.—p. 91.
Diagnosis and Treatment of Preeclampsia. R. Emens, Decatur.—p. 99.
Drugs in Infancy and Early Childhood: Dosage and Accurate Administration. R. E. Cloud, Birmingham.—p. 102.

Sympathetic Block for Thrombophlebitis.—DeBakey and Ochsner believe that the best method of treating thrombophlebitis is the production of vasodilatation by blocking the regional sympathetic ganglion with procaine hydrochloride. The method is based on the concept that vasospasm resulting from impulses originating from the thrombosed venous segment is one of the most important factors in producing thrombophlebitis. The edema of the extremity in a patient with phlegmasia alba dolens should disappear within a relatively short time after sympathetic ganglion block. Similarly the other manifestations are also probably relieved by the increased vascularity. The dramatic relief of pain is probably due to the increased blood supply, the pain being the result of ischemia. The rapid subsidence of fever may also be explained on the basis of a more rapid resolution of the inflammation because of the increased vascularity to the involved venous segment. The pain of 85 per cent of 41 patients so treated was completely and permanently relieved within from fifteen to thirty minutes after the first injection and in the rest after the second injection. More than 60 per cent of the patients were free from fever within forty-eight hours. The temperature of all but 2 patients returned to normal within seven days. There was complete subsidence of edema within four days or less in 50 per cent of the patients, within five to eight days in 30 per cent and within nine to ten days in 15 per cent. This method of therapy shortened the period of convalescence and hospitalization. Approximately 90 per cent were discharged within twelve days. The sites of puncture for the lower extremity are determined by marking points approximately two and one-half fingerbreadths lateral to and horizontal with the spinous processes of the first four lumbar vertebrae. Each needle is inserted vertically until the transverse process is reached; its direction is then changed slightly toward the midline and it is inserted about two and one-half fingerbreadths beyond the transverse process, so that its point is near the anterior lateral surface of the body of the vertebra, where the sympathetic chain lies. Procaine hydrochloride, 5 cc. of a 1 per cent solution, is injected at each site. Blocks, two or three, should be done daily until the temperature drops to and remains normal. Radical treatment, ligation or excision of the involved venous segment or ligation of the vein proximal to a thrombophlebitic process, is rarely necessary.

Appendicitis.—Carraway states that since 1923, when the surgical staff and other members of the Norwood Clinic began to make a careful study of patients with appendicitis in an effort to lower the mortality, there has been a steady decrease in mortality. The decrease has been most definite during the last five years (0.31 per cent in all types of appendicitis). The decrease is a reflection of the great reduction of cases of rupture and abscess (from 30.8 to 3.4 per cent). Omitting 2 cases of abscessed appendix in which the diagnosis was not confirmed at operation or necropsy there have been only 2 deaths among 116 patients with perforated and/or abscessed appendixes, a mortality of 1.72 per cent during the last five years, during which immediate operation was always advocated. The author believes that the following factors have helped to lower the mortality: (1) correct taking of the history and careful physical examination permitting an early diagnosis, (2) insistence that the family physician not procrastinate and if he is doubtful that he get a competent consultant, (3) recognition of the fact that in the patient whose onset of symptoms is severe and the cycle completed in a short time the appendix is more likely to become gangrenous and to rupture, making delay in operation unwise, (4) rigid postoperative care, especially of the patient with a ruptured appendix and (5) the assignment of patients with peritonitis to only the most thoroughly trained and experienced surgeons.

American Heart Journal, St. Louis

22:289-438 (Sept.) 1941

Autonomic Mechanism of Heat Conservation and Dissipation: Effects of Heating the Body, Evidence for Existence of Capillary Dilator Nerves in Anterior Roots. O. R. Hyndman and J. Wolkin, Iowa City.—p. 289.
Spinal Cord Ischemia in Dissecting Aortic Aneurysm. F. L. Tuohy, P. G. Boman and G. L. Berdez, Duluth, Minn.—p. 305.
Effect of Chronic Cardiac Compression on Size of Heart Muscle Fibers. J. T. Roberts and C. S. Beck, Cleveland.—p. 314.
Errors in Measurement of PR (PQ) Interval and QRS Duration in Electrocardiogram. P. D. White, C. E. Leach and S. A. Foote, Boston.—p. 321.
Observations on Reactive Hyperemia in Various Portions of Extremities. D. I. Abramson, K. H. Katzenstein and E. B. Ferris Jr., Cincinnati.—p. 329.
*Blood Picture in Rheumatic Fever. Valentina P. Wasson, E. E. Brown and Clarice Weintraub, New York.—p. 342.
Venous Pressure Responses to Exercise: Preliminary Report. P. Szekely, London, England.—p. 360.
Action of Calcium on Human Electrocardiogram. N. E. Clarke, Detroit.—p. 367.
*Experimental Studies on Effect of Temporary Occlusion of Coronary Arteries: II. Production of Myocardial Infarction. H. L. Blumgart, D. R. Gilligan and M. J. Schlesinger, Boston.—p. 374.
Fetal Electrocardiography. H. Mann and P. Bernstein, New York. p. 390.
Wolff-Parkinson-White Syndrome, with Paroxysms of Ventricular Tachycardia. S. A. Levine and P. B. Beeson, Boston.—p. 401.

Blood Picture in Rheumatic Fever.—Wasson and her associates studied in detail the blood of 100 hospitalized children with acute rheumatic fever. The study reveals that blood determinations if frequently and accurately repeated give a correct index of the status of a rheumatic child. The study corroborates the prevailing opinion that the erythrocyte sedimentation rate is the most delicate nonspecific indication of rheumatic infection. However, allowance must be made for the premenstrual period and for acute anemia. The mean erythrocyte sedimentation rate of menstruating girls is higher than that of puberal girls and boys. When an infection of the upper part of the respiratory tract ushered in an attack of rheumatic fever, the erythrocyte sedimentation rate would rise and remain accelerated or it would continue to rise after the symptoms of the cold had subsided. Single erythrocyte sedimentation rates are of negligible, if of any, value. It takes the erythrocyte sedimentation rate on an average of two months to return to normal in acute rheumatic fever; if a rise becomes normal in a few days or even two weeks the patient has had an infection other than rheumatic fever. The nonfilamented neutrophil count is not so sensitive as the erythrocyte sedimentation rate, but it has the advantage that an increase in the nonfilamented cells always heralds an infection, and often a severe one. During acute attacks of rheumatic fever the nonfilamented cell count closely parallels the sedimentation rate, except in the terminal stages, when it returns to normal sooner. A normal Schilling count does not mean that infection is absent, but that the infection either is trivial or is just beginning and that as yet it has had no effect on the bone marrow. A single hemoglobin level determination is an unreliable standard of activity. Only the trend of the hemoglobin curve has significance. Of a total of eight hundred and twenty-three blood platelet counts, 66.93 per cent were below 200,000, and only 4.38 per cent above 250,000. This sharply subnormal platelet count in children subject to rheumatic fever characterizes the quiescent as well as the acute stage of the disease. An acute infection produced a sharp decrease in platelets only toward the end of the attack, and then a rapid rise. The bleeding and coagulation times had no diagnostic significance. Capillary resistance was important in the diagnosis of the rheumatic state. The lowest capillary resistances were observed in children who had had repeated attacks of epistaxis. The lowest erythropermeability occurred during the spring

months, when attacks of rheumatic fever are most frequent. The hemorrhagic tendency of the rheumatic state may be explained by (1) the generally low blood platelet level with further reduction during the acute phase and (2) the increased capillary erythropermeability of all patients with rheumatic fever, especially those prone to nosebleeds and acute attacks of fever.

Occlusion of Coronary Arteries.—According to Blumgart and his collaborators, experiments were performed on 39 dogs to learn whether temporary occlusion of a coronary artery would produce myocardial infarction and persistent electrocardiographic changes characteristic of myocardial ischemia. In 12 of 18 animals allowed to survive four or more days electrocardiographic changes typical of myocardial ischemia were found during the first few days to weeks after occlusion of a coronary artery for five to forty-five minutes. The type of change varied according to whether the occlusion was in the anterior descending or left circumflex artery. Eight animals died of ventricular fibrillation during the first five minutes of occlusion or when the circulation was reestablished after fifteen to thirty minutes of occlusion. No gross evidence of myocardial infarction was found in the 7 animals that lived for four to forty days after occlusion for five to twenty minutes. There was gross evidence, proved subsequently by microscopic examination, of infarction in 8 of 11 experiments in which occlusion was maintained for twenty-five to forty-five minutes. The extent of infarction was roughly in proportion to the duration of the arterial occlusion. The experiments indicate that temporary ischemia may cause irreversible myocardial changes and, if the ischemia is of sufficient duration, may cause myocardial infarction similar to that which occurs after permanent and complete occlusion of an artery. In man, pathologic observations indicate that an inadequate blood supply over a prolonged time may cause the same myocardial changes as complete ischemia of shorter duration. The focal areas of fibrosis commonly found in the hearts of patients with angina pectoris and those areas of the hearts of dogs subjected to temporary ischemia seem to have a common underlying pathologic physiologic mechanism. Angina pectoris is the clinical expression of temporary, relative, myocardial ischemia. The cardiac pain of some patients is more prolonged than that consistent with angina pectoris, but the clinical evidence of myocardial necrosis is absent and a diagnosis of angina pectoris or acute myocardial infarction would be erroneous. Coronary failure and angina pectoris seem to have the same physiologic basis. The experimental, clinical and pathologic data regarding "silent infarction" of the myocardium suggest that the areas of fibrosis were not completely occluded. The authors believe that the experimental data obtained are applicable to the phenomenon of cardiac infarction in the absence of complete occlusion of a coronary artery in man.

American J. Digestive Diseases, Fort Wayne, Ind.

8:321-360 (Sept.) 1941

*Digestive Disorders in Soldiers. A. Hurst, London, England.—p. 321.
Effect of Liquid and Solid Meals on Intestinal Activity. J. H. Grindlay and F. C. Mann, Rochester, Minn.—p. 324.
Acute Pancreatitis with Fat Necrosis. F. G. Connell, Oshkosh, Wis.—p. 327.
Relation of Nutrition to Gastric Function: III. Effect of Vitamin B Deficiency. Helen M. Dyer and J. H. Roe, Washington, D. C.—p. 329.
Relation of Nutrition to Gastric Function: IV. Effect of Vitamin A Deficiency. Helen M. Dyer and J. H. Roe, Washington, D. C.—p. 333.
Pancreatic Secretion in Man After Administration of Different Stimulants: Comparative Study. M. W. Comfort and A. E. Osterberg, Rochester, Minn.—p. 337.
*Hereditary Hemorrhagic Telangiectasia with Gastrointestinal Bleeding. D. E. Griggs and M. Q. Baker, Los Angeles.—p. 344.
Comparison of Three Urobilinogen Tests in the Urine, (Watson, Sparkman and Wallace and Diamond Methods) in Jaundice and Diseases of Liver. F. W. White, A. P. Meiklejohn, E. Deutsch and R. Kark, Boston.—p. 346.
Gastric Secretion in Enterectomized Dogs. J. S. Gray, J. A. Wells and A. C. Ivy, Chicago.—p. 353.
Effect of Anoxemia and Oxygen Therapy on Flow of Bile and Urine in the Nembutalized Dog: II. Its Possible Relationship to Hepatorenal Syndrome. J. G. Schnedorf and T. G. Orr, Kansas City, Kan.—p. 356.

Digestive Disorders in Soldiers.—Hurst points out that most soldiers admitted to hospitals in England for gastric or duodenal ulcer have had attacks before joining the army. The recurrence appears to be due to the change from the comparatively strict civilian diet to the heavy army food. Psychologic factors have had little, if any, importance in the British Expeditionary Force, but this was not true among soldiers serving in England. Symptoms recurred in 70 per cent within two months and often within a few days, and in the remainder within eight months after enlistment. Among soldiers with ulcer, the teeth of 38 per cent were inadequate for chewing. The author believes that no man who presents definite evidence of having had an ulcer should be accepted for service. He should be rejected even if he has been free of symptoms for a long time as the ulcer diathesis is always present and it makes him liable to recurrences especially when his strict civilian life is replaced by the comparative hardships of military service. Dyspepsia alone should not be a reason for rejection. Soldiers with mild dyspepsia should not be hospitalized but treated by reassurance and alkali mixtures by their regimental medical officers. Those with severe dyspepsia of long standing should be treated at hospitals, and when ulcer, gastritis, cholecystitis and other possible organic causes have been excluded, the dyspepsia can be regarded as functional, except in malingerers. The tendency in the army to call all functional gastric disorders "gastritis" is a mistake. Gastritis is an organic disease; it is most undesirable to confuse it with functional gastric disorders with no organic basis. If an ulcer is diagnosed the soldier should usually be invaiided from the service. An exception may be made for officers and other men with important sedentary duties, for whom provision can be made for regular well cooked meals and intermediate feeds. Functional dyspepsia should be treated immediately and the soldier's ability to eat ordinary army food and face ordinary army life restored. The recognized malingerer should be sent back to duty. Delay in proper treatment and disposal is likely to produce "disordered action of the stomach" corresponding to "disordered action of the heart" or the "effort syndrome." Both conditions are genuine enough, but they are the product of bad treatment and not of army life. The author believes that much man power would be saved if special army units, as suggested by Schindler, staffed by medical officers experienced in gastroenterology, clinical pathologists and expert roentgenologists would be established. Such units would recognize at least 95 per cent of chronic gastric and duodenal ulcers. The unit should have three distinct divisions: division A for diagnosis, division B for patients suffering from organic disease and division C for those suffering from functional dyspepsia. A few patients admitted into division C might be hopeless hypochondriacs, who should be discharged from the army without pensions.

Hereditary Hemorrhagic Telangiectasia.—Griggs and Baker report the 3 cases of multiple telangiectasia with gastrointestinal bleeding encountered at the Los Angeles County Hospital during the last twelve years. The diagnosis of hereditary hemorrhagic telangiectasia is usually not difficult; telangiectatic lesions on the skin and mucous membranes, the definite tendency for the lesions to bleed and a positive family history comprise the diagnostic criteria. Information regarding the family history of the first patient is meager, but a negative history would not militate against the diagnosis, since Fitz-Hugh has pointed out that the disease may skip one or more generations. Two of the patients first noticed symptoms toward the end of the fourth decade. Gastrointestinal bleeding rarely occurs before this, but nasal bleeding is not unusual in the teens. The sexes are equally affected. The disease may be transmitted by either sex. The spleen of 1 patient and the spleen and liver of another patient were enlarged. The patient with the enlarged spleen had two severe transfusion reactions. The mortality of the disease is low, but death from spontaneous hemorrhages from a telangiectatic area may occur. Several instances of such deaths occurred in the families of the patients reported on. Severe bleeding is ascribed by Steiner to the absence of elastic tissue in the dilated vessels of telangiectatic areas. Familial multiple telangiectasia should be considered in all cases of obscure gastrointestinal bleeding. Gastrointestinal hemorrhage frequently causes abdominal discomfort. All 3 patients at times had some abdominal distress, especially during active bleeding.

American Journal of Diseases of Children, Chicago

62:481-700 (Sept.) 1941

Polyps of Rectum and Colon in Infants and Children. R. L. J. Kennedy, Rochester, Minn.—p. 481.
Granules in Leukocytes in Gargoylism. W. A. Reilly, San Francisco. —p. 489.
Effect of Refined Antipertussis Rabbit Serum on Humoral Antibody Titer in Pertussis. W. L. Bradford, H. W. Scherp and Anne M. Brooks, Rochester, N. Y.—p. 492.
Study of Metabolism of Ingested Pectin. S. C. Werch and A. C. Ivy, Chicago.—p. 499.
Domestic Water and Dental Caries: III. Fluorine in Human Saliva. F. J. McClure, Washington, D. C.—p. 512.
Effect of Adding Vitamin B Complex to Diets of Stabilized Diabetic Children. R. L. Jackson and Irene Barth, Iowa City.—p. 516.
*Sulfanilamide in Treatment of Acute Otitis Media in Children. L. L. Braun, Chicago, and J. A. Bigler, Highland Park, Ill.—p. 521.
Blood Cells in Healthy Young Infants: IV. Postnatal Readjustments of Red Blood Cells in Individual Babies. A. H. Washburn, Denver. —p. 530.
*Reduction of Serum Reactions: Use of Antitoxins of Which Protein Specificity Has Been Altered by Enzymic Digestion. F. H. Top and E. H. Watson, Detroit.—p. 548.
Cerebral Abscess and Paradoxic Embolism Associated with Congenital Heart Disease: Report of Seven Cases, with Review of Literature. R. Hanna, Los Angeles.—p. 555.
Magnesium Needs of Preschool Children. Amy L. Daniels, with technical assistance of Gladys J. Everson and Margaret L. Cooper, Iowa City.—p. 568.
*Congenital Absence of Right Lung: Its Occurrence in Healthy Child. Emily L. Van Loon and S. Diamond, Philadelphia.—p. 584.

Sulfanilamide for Otitis Media.—Braun and Bigler determined the value of chemotherapy for acute otitis media by treating half of 425 children with this condition with sulfanilamide and symptomatic treatment and the other half only by symptomatic treatment. The ages of the patients varied from 2 weeks to 13 years. Both ears of 238 patients were involved, so that 663 ears were treated. The average duration of otorrhea was eleven and fifty-eight hundredths days for the patients given sulfanilamide and twenty and forty-three hundredths days for the controls. Myringotomy, indicated by sustained fever, severe earache and bulging of the tympanic membrane, was performed on 33 of the patients treated with sulfanilamide and on 50 controls. The most significant difference among the two groups was the incidence of complications; there were 12 instances of surgically proved mastoiditis among the controls and only 4 among the patients given sulfanilamide. This made complicating mastoiditis three times as prevalent among the controls as among the specifically treated patients. There were no fatalities in either group. The results suggest that careful, adequate and sufficiently sustained sulfanilamide therapy should be tried early in all cases of acute otitis media.

Serum Reactions.—Top and Watson used "despeciated" diphtheria antitoxin for 61 patients and "despeciated" scarlet fever antitoxin for 69 patients. Despeciated indicates that the proteins of the antitoxin are so altered that specific biologic reactions to horse serum were prevented when tested on laboratory animals. The antitoxin molecule is altered only slightly, but the alteration is enough to change its biologic specificity without impairing its antitoxic or antibacterial properties or its potency. The authors' experience coincides with that of others who have used "despeciated" antitoxins in that they found that allergic reactions were greatly reduced. The immediate advantages of "despeciated" serums are threefold: 1. Most patients who are very sensitive to ordinary serums may now be treated effectively. 2. The incidence of all serum reactions can be greatly reduced. 3. It seems probable that serotherapy may now be given to certain patients to whom it was formerly denied. The question whether the hesitancy to use serotherapy in moderately severe scarlet fever because it may preclude the use of diphtheria or tetanus antitoxin later on is removed by "despeciated" antitoxins remains to be answered by additional clinical information, particularly by the tolerance of patients to the readministration of these antitoxins at intervals of months or years. Published reports indicate that the incidence of all reactions (allergic) with the use of the new antitoxins is less than 10 per cent as compared with a control incidence of 40.5 per cent among 2,675 cases reported by Fox and 43.6 per cent among 87 controls given regular antitoxin by Toomey and Kimball.

Absence of Right Lung.—Van Loon and Diamond report the case of an otherwise healthy child who presented unmistakable evidence of congenital absence of the right lung. Other than Münchmeyer's clinical diagnosis of unilateral pulmonary agenesis shortly before the death of his 2 year old male patient with pneumonia, subsequently verified at postmortem examination, the authors believe that theirs is the first clinically authentic case. Their patient is a girl 3½ years of age, with a normal developmental history, who except for several transient episodes of illness, characterized by a profuse nasal discharge, a mild cough and, at times, noisy breathing, has always been in excellent health. During one of these episodes of illness the first roentgenograms of the chest were made and their appearance prompted the attending physician to advise hospitalization for further study. At present there is no evidence that she has any other congenital anomaly. The pulmonary anomaly consists of absence of the right main stem bronchus and lung and narrowing of the lower end of the trachea. Roentgen study indicates that no pulmonary vessels are present on the right side, but proof must await demonstration at necropsy. The patient's prognosis, barring extensive disease of the left lung, appears to be good. There is no reason to believe that the child's future course will be adversely affected by her pulmonary aplasia. Heerup's report of a similar congenital defect in a woman of 72, who died of cerebral hemorrhage, indicates that the condition is compatible with longevity.

American Journal of Ophthalmology, Cincinnati

24:979-1104 (Sept.) 1941

Biochemistry of Lens: XV. Studies on Swelling of Isolated Lens. J. G. Bellows and H. Chinn, Chicago.—p. 979.
Oculogyric Crises: Therapeutic Approach. R. M. Klemme, St. Louis. —p. 1000.
Hyperostosis of Orbit. W. L. Benedict, Rochester, Minn.—p. 1005.
Hereditary Craniofacial Dysostosis. E. A. Vorisek, Chicago.—p. 1014.
Management of Strabismus at the Milwaukee Children's Hospital. J. B. Hitz, Milwaukee.—p. 1019.
What Can Be Expected of Orthoptic Training? Edna Knauber, New York.—p. 1022.
Gonioscopic Observations in Cyclodialysis Operations. S. T. Clarke, Boston.—p. 1026.
Bitot's Spots in Trinidad. Vivian M. Metivier, Port-of-Spain, Island of Trinidad.—p. 1029.
Observations on Chemotherapy of Trachoma. A. R. McKelvie, R. Kirk and H. J. Holder, Khartoum, Anglo-Egyptian Sudan.—p. 1035.
Convergence Insufficiency. Beulah Cushman and Clara Burri, Chicago. —p. 1044.
Wollaston and Hemianopsia. J. E. Lebensohn, Chicago.—p. 1053.
San Francisco Orthoptic Laboratory: Cooperative Establishment. F. C. Cordes, San Francisco.—p. 1057.

American Journal of Public Health, New York

31:905-1026 (Sept.) 1941

Administration of Medical Services as Part of Health Department Program. D. L. Seckinger, Washington, D. C.—p. 905.
Control of Venereal Diseases in Civilian Areas Adjacent to Concentrations of Armed Forces. A. B. Price and F. J. Weber, New Orleans. —p. 912.
Outbreak of Endemic Typhus Fever in Nashville, Tenn.: Its Epidemiology and Control. C. B. Tucker, T. V. Woodring and H. C. Essick, Savannah, Ga.—p. 917.
Application of Epidemiologic Method to Study of Distribution of Medical Care. J. J. Bourke and Margaret Bullowa, Albany, N. Y.—p. 926.
*Human Equine Encephalomyelitis in Kern County, Calif., 1938, 1939 and 1940. W. C. Buss and Beatrice F. Howitt, San Francisco. —p. 935.
Epidemiology and Laboratory Diagnosis of Infectious Jaundice (Weil's Disease). J. G. Molner and J. A. Kasper, Detroit.—p. 945.
Tuberculosis Infection in Relation to Tuberculin Sensitivity in School Children: Roentgenologic Evidence—Second Report. R. S. Gass, W. J. Murphy, E. F. Harrison, Ruth R. Puffer, and W. C. Williams, Nashville, Tenn.—p. 951.
Studies of Rebaking Cream-Filled Pastries. F. W. Gilcreas and M. B. Coleman, Albany, N. Y.—p. 956.
Types of Personnel in Public Health Statistics. J. Sundwall, Ann Arbor, Mich.—p. 959.
Comparison of Undechlorinated and Dechlorinated Swimming Pool Waters. C. A. Holmquist, Albany, N. Y.—p. 961.
Organization, Supervision and Objectives of Prenatal Medical Care. E. D. Plass, Iowa City.—p. 964.

Human Equine Encephalomyelitis.—Buss and Howitt state that since 1939 a different point of view has obtained concerning the neurotropic diseases (equine encephalomyelitis and poliomyelitis) in Kern County, Calif. Although poliomyelitis predominated, an unexpectedly high proportion of the cases were equine encephalomyelitis and a few were the St. Louis type of encephalitis. This was demonstrated by serum neutralization

tests. A few remained undiagnosed. Thus it has been shown that more than one variety of neurotropic virus disease is prevalent in the county. In 1938 71 patients, in 1939 160 and in 1940 85 patients were admitted to the Kern County General Hospital with a tentative diagnosis of neurotropic virus disease. On the basis of neutralization tests, epidemiologic histories and clinical and laboratory observations 116 patients were segregated as having equine encephalomyelitis; 22 in 1938, 46 in 1939 and 48 in 1940. The western equine virus was recovered from the brains of 2 patients. Of 112 specimens of serum obtained during the three years from patients with a diagnosis of encephalitis, 97 (86.6 per cent) and of 82 specimens of serum from patients with a diagnosis of poliomyelitis 5 (6 per cent) neutralized the equine virus. Among 82 well contacts, the serum of only 6 (7.3 per cent) showed evidence of neutralizing ability; the serum of 5 was weakly positive and of 1 was strongly positive. The serum of 41 sick contacts was tested for neutralizing ability and that of 29 (70.7 per cent) was positive for the virus of equine encephalomyelitis. That so many of the sick contacts really had a mild form of the same disease is suggestive of a common source of infection or exposure to similar environmental conditions, especially as many of them lived on farms, in labor camps, in box cars or in small towns where there was an abundance of mosquitoes. Males were predominant among patients with poliomyelitis or encephalitis and the largest percentage of patients with a diagnosis of encephalomyelitis in all three years were children less than 10 years of age. Equine encephalomyelitis began about May, increasing to a peak in August in 1938 and 1939, and in July in 1940, and then it dropped off abruptly, with only a few cases through November. All cases were centered in the farming and irrigated areas in the central and western portions of the county. None were reported from the mountains or the eastern desert districts. Treatment during the acute and following stages of the disease was entirely nonspecific. For severe convulsions a variety of sedatives were used. During the comatose state parenteral fluids and gavage feedings were administered as required. Small transfusions and intramuscular injections of blood were given routinely. Physical therapy or casts were used for spasticity or weakness of the extremities. A periodic check of every patient followed discharge from the hospital. Recovery was apparently normal in all of them. Since 97 patients with encephalitis in Kern County during the last three years have given positive neutralization reactions against the western equine virus the evidence suggests that a permanent endemic area exists unless control measures are instituted.

Archives of Internal Medicine, Chicago

68:375-662 (Sept.) 1941

*"Primary" Hypochromic Anemia Terminating in Pernicious Anemia. E. B. Miller and W. Dameshek, Boston.—p. 375.
*Natural History of Bronchiectasis. A. G. Ogilvie, Newcastle-on-Tyne, England.—p. 395.
Blood Pressure Studies on West Indians and Panamanians Living on the Isthmus of Panama. B. H. Kean, Ancon, Canal Zone.—p. 466.
Transmission of Antianemic Principle Across the Placenta and Its Influence on Embryonic Erythropoiesis. O. P. Jones, Buffalo.—p. 476.
State of Motor Centers in Circulatory Insufficiency. E. Simonson and N. Enzer, Milwaukee.—p. 498.
*Acacia in Treatment of Nephrotic Syndrome, with Special Reference to Excretion of Chloride and Water. A. Goudsmit Jr., Philadelphia, M. W. Binger and N. M. Keith, Rochester, Minn.—p. 513.
Diagnosis of Carcinoma of Pancreas. J. E. Berk, Philadelphia.—p. 525.
*Primary Pulmonary Vascular Sclerosis. I. C. Brill and J. J. Krygier, Portland, Ore.—p. 560.
*Response of Normal Subjects to Acute Blood Loss, with Special Reference to Mechanism of Restoration of Blood Volume. R. V. Ebert, E. A. Stead Jr. and J. G. Gibson 2d, Boston.—p. 578.
*Clinical Lipoid Nephrosis. G. G. Gilbert, Durham, N. C.—p. 591.
Vascular Diseases: Seventh Annual Review. G. W. Scupham, G. de Takats, T. R. Van Dellen and J. H. Jesser, Chicago.—p. 599.

Hypochromic Anemia Terminating in Pernicious Anemia.—Miller and Dameshek cite 2 cases of "primary" or "idiopathic" hypochromic iron deficiency anemia which terminated in pernicious anemia. In the first patient, the Plummer-Vinson syndrome was present and the response to iron was good; typical pernicious anemia that responded to liver extract developed several years later. In the other patient, presenting an apparent typical primary hypochromic anemia, pernicious anemia developed after iron therapy. In this patient apparently both iron deficiency and liver extract deficiency were simultaneously present and the iron therapy "unmasked" the underlying macrocytic anemia. Constitutional atrophic gastritis with gastric achlorhydria seemed to be present in the first patient. During a period of emotional stress, dysphagia appeared, and because of it a diet deficient in foods containing iron was taken and a chronic iron deficiency appeared. A few years later, probably as the result of functional or organic involvement of the pylorus, the intrinsic factor probably became greatly diminished and pernicious anemia resulted. Evidence in the literature seems to indicate that some persons possess a constitutional predisposition to gastric achlorhydria. This is often familial. During the stage of simple achlorhydria, hypochromic anemia may result, especially if another factor, such as dysphagia, inadequate diet, intestinal malabsorption or hemorrhage, is present. Occasionally the intrinsic factor of Castle may become seriously diminished and pernicious anemia result.

Development of Bronchiectasis.—Ogilvie discusses the natural development of bronchiectasis, in textbook style, under the headings of pathogenesis, etiology, clinical features, roentgenologic aspects, classification and prognosis. He presents an analysis of the condition in 68 patients whom he encountered during the last few years. The lobes of 28 were examined. A classification which recognizes congenital cystic disease of the lung and atelectatic and bronchogenic types of acquired bronchiectasis is suggested. The conclusion is reached that bronchial dilatation may be temporary or permanent. The first is always due to pulmonary collapse and the second is the result of the interaction of many factors, the most important of which is infection of the bronchial wall. The pathogenic factors in bronchiectasis fall under two heads: defects in the bronchial wall and excessive strain and stress to which the wall may be subjected. No conclusive evidence of the existence of congenital bronchiectasis, apart from congenital cystic disease of the lung, has been found as yet. An accurate history and careful physical examination are of utmost importance in the diagnosis of bronchiectasis, as in but few cases have physical signs been absent. The causes of death are classified into three groups: (1) local exacerbation or spread of infection within the lungs or the thoracic cavity, (2) direct complications of associated conditions and intercurrent disease and (3) dissemination of infection via the blood stream and the late results of chronic sepsis.

Acacia for Nephrotic Syndrome.—Goudsmit and his collaborators studied the chloride excretion of 4 nephrotic patients treated with acacia and 1 treated by a dietary regimen and potassium nitrate but no acacia. The major deficiency of renal excretion in the syndrome is in the elimination of sodium chloride and water. After injection of acacia usually considerably more water and sodium chloride were excreted in the urine. This increased excretion brought about a reversal of conditions which was significant and beneficial in comparison to untreated patients. Increases in the volume of the circulating blood or changes of colloid osmotic pressure appear to account for this change in renal function. Potassium salts, particularly potassium nitrate, also increase the amount of water and sodium chloride excreted. Acacia and potassium nitrate seem to remove the fluid of edema from a large percentage of adult patients with the nephrotic type of edema. The mechanism by which acacia increases this excretion is as yet unexplained. An analogous effect might be responsible for the diuretic effect.

Pulmonary Vascular Sclerosis.—Brill and Krygier report the twentieth case of primary pulmonary vascular sclerosis which fulfils Brenner's requirements: significant hypertrophy of only the right ventricle and the absence of any factors commonly believed to cause secondary pulmonary vascular sclerosis, pulmonary hypertension or strain of the right side of the heart. In their case the principal clinical manifestation was severe strain of the right side of the heart resulting in death. Pathologically definite isolated cor pulmonale was present, and the only lesion which might have been related to the fatal cor pulmonale was extensive sclerosis and occlusion of the pulmonary vascular tree. Clinically or pathologically only slight evidence of congestive heart failure was observed. More than a year prior to death the patient, while yet not 20, began to suffer from attacks of precordial pain. Sometimes the pain was

"not radiating," and the attacks were often associated with cyanosis. This is similar to the "hypercyanotic angina" which has been described, especially by the older writers on so-called Ayerza's disease, as occurring occasionally in severe chronic cor pulmonale. Although the coronary vessels were patent and free of sclerosis it appears probable that the sudden death and the earlier attacks of anginal pain were due to acute coronary insufficiency owing to the greatly diminished volume of blood delivered to the left ventricle. Theories concerning the cause and the pathogenesis are discussed, and especial reference is made to the possibility of an essential pulmonary hypertension being related to strain of the right side of the heart similar to that of essential systemic hypertension on the left side of the heart.

Effect of Acute Blood Loss on Normal Subjects.—Ebert and his collaborators determined the effect that the removal of 760 to 1,220 cc. of blood (15.5 to 19.7 per cent of the total blood volume) had on 6 professional blood donors. The blood was drawn in six to thirteen minutes. Collapse, characterized by weakness, nausea, blurred vision, pallor, sweating and fall in arterial pressure, developed in 5 of the 6 subjects. Before the onset of collapse the heart rate increased from 14 to 30 beats per minute above the basal level, but at its height the heart rate ranged from 36 to 40 beats per minute. The plasma volume began to increase immediately after hemorrhage and continued to do so for the next forty-eight to seventy-two hours, at the end of which it was approximately equal to that before hemorrhage plus the volume of erythrocytes withdrawn. During the first two hours after venesection the plasma volume was increased by protein-poor fluid decreasing the serum protein concentration. Thereafter, fluid and protein were added to the plasma and the serum protein remained unchanged, but the total circulating protein increased. Loss of blood acted as a physiologic stimulus for the production of normal protein, and the addition of new protein did not change the proportion of albumin and the various globulin fractions. The blood volume after hemorrhage was not restored to normal until new plasma protein was added to the circulation. Hematocrit readings accurately reflected the direction of a change in plasma volume.

Lipid Nephrosis.—Gilbert followed a typical case of lipid nephrosis for four years and then finally at necropsy. Nephritis with associated uremia developed terminally, and the anatomic changes characteristic of chronic glomerulonephritis were revealed at necropsy. During the four years the patient, a white child 5 years of age at death, was hospitalized thirteen times. On the final admission the clinical picture had changed to such an extent that the diagnosis of lipid nephrosis was no longer tenable, as all the typical signs and symptoms of chronic glomerulonephritis were present. The study supports the thesis that lipid nephrosis and chronic glomerulonephritis are not separate and distinct anatomic entities but merely different manifestations or phases of the same general pathologic process, that is, progressive failure of renal function.

Archives of Neurology and Psychiatry, Chicago

46:377-568 (Sept.) 1941

Objective Measurement of Relative Intracranial Blood Flow in Man, with Observations Concerning Hydrodynamics of Craniovertebral System. E. B. Ferris Jr., Cincinnati.—p. 377.
Corpus Striatum and Thalamus of Partially Decorticate Monkey. S. W. Ranson, S. W. Ranson Jr. and Mary Ranson, Chicago.—p. 402.
Subcortical Hematoma: Surgical Treatment, with Report of Eight Cases. C. Pilcher, Nashville, Tenn.—p. 416.
Hepatolenticular Degeneration: Report of Case. Charlotte G. Babcock and H. W. Brosin, Chicago.—p. 431.
Multiple Meningioma: Removal of Ten Intracranial Tumors from a Patient. D. H. Echols, New Orleans.—p. 440.
Vascular Malformations and Vascular Tumors Involving Spinal Cord: Pathologic Study of Forty-Six Cases. O. A. Turner and J. W. Kernohan, Rochester, Minn.—p. 444.
Peripheral Neuropathy: Evaluation of Sensory Findings. M. H. Stein, H. Wortis and N. Jolliffe, New York.—p. 464.
Tabes Dorsalis: Evaluation of Sensory Findings. M. H. Stein and H. Wortis, New York.—p. 471.
Changes in Brain in Pertussis with Convulsions. Vera B. Dolgopol, New York.—p. 477.
Observations on Monkeys with Bilateral Lesions of Globus Pallidus. S. W. Ranson and C. Berry, Chicago.—p. 504.

Bulletin of Johns Hopkins Hospital, Baltimore

69:225-296 (Sept.) 1941

Pyruvate Oxidation and the Citric Acid Cycle. E. A. Evans Jr., Chicago.—p. 225.
Electroencephalographic Changes Associated with Different Forms of Experimentally Produced Increased Intracranial Pressure. W. A. Stewart, New York.—p. 240.
Failure of Pyridoxine (Vitamin B6) to Modify the Parkinsonian Syndrome. W. H. Barker, H. J. Stein, M. H. Miller and M. M. Wintrobe, Baltimore.—p. 266.
Graphic Solution of the Dosage-Effect Curve. J. T. Litchfield Jr., Baltimore, and J. W. Fertig.—p. 276.
Comparison of Ball-Mill and Coca Extracts of Ragweed Pollen in Treatment of Hay Fever. W. L. Winkenwerder, Baltimore; C. Arbesman, Buffalo, L. N. Gay and H. Eagle, Baltimore.—p. 287.

Georgia Medical Association Journal, Atlanta

30:297-336 (July) 1941

Vaginal Smear as Guide to Estrogenic Therapy. R. B. Greenblatt, Augusta.—p. 297.
Hypogonadism: Report of Case Showing Results Following Use of Neohombreol. E. Floyd, J. L. Pittman and R. W. Edenfield, Atlanta.—p. 304.
Cleveland Session of American Medical Association: Observations, Interpretations and a Little Homespun Medical Philosophy. C. W. Roberts, Atlanta.—p. 305.
Plight of the Arthritic. R. L. Cecil, New York.—p. 318.
Physician, Care for Thyself. E. A. Allen, Atlanta.—p. 325.

30:337-376 (Aug.) 1941

Biliary Obstruction Complicating Hemorrhagic Disease of Newborn. J. T. Leslie and K. S. Hunt, Griffin.—p. 337.
Analysis of 500 Incomplete Abortions. C. M. Mulherin, Augusta.—p. 342.
Surgery of Spleen: Report of Cases. L. W. Grove, Atlanta.—p. 346.
Chronic Hypoglycemia in Psychotic Patients Following Prolonged Insulin Shock Therapy: Preliminary Report. J. R. S. Mays and Y. H. Yarbrough, Milledgeville.—p. 353.
Scalenus Anticus Syndrome (Brachial Neuritis): Report of Five Cases. E. Walker, Atlanta.—p. 356.
Blackheads and Pimples: Attitude Toward Acne Vulgaris. H. S. Alden and J. W. Jones, Atlanta.—p. 359.

30:377-414 (Sept.) 1941

Special Field of Cardiac Surgery. D. C. Elkin, Atlanta.—p. 377.
Vulvovaginal Mycosis. F. R. Minnich, Atlanta.—p. 386.
Intussusception Associated with Polyp in Meckel's Diverticulum: Report of Case. F. H. Brown, Jacksonville, Fla.—p. 390.
Role of Liver in Surgical Risk. H. Acuff, Knoxville, Tenn.—p. 392.
Vitamin D Therapy in Psoriasis. J. Krafka, Augusta.—p. 398.
Tularemic Pneumonia: Report of Case. W. G. Elliott, Cuthbert.—p. 401.

Illinois Medical Journal, Chicago

80:177-264 (Sept.) 1941

Anorexia Nervosa. R. F. Farquharson, Toronto, Canada.—p. 193.
Treatment of Psychiatric States Following Pregnancy. S. H. Kraines, Chicago.—p. 200.
*Are Present Day Quarantine Methods Archaic? A. L. Hoyne, Chicago.—p. 205.
Use of Seconal in Pediatric Procedures. L. Breslow and H. G. Poncher, Chicago.—p. 210.
Surgical Management of Ureteral Stone. E. W. White, Chicago.—p. 212.
Early Diagnosis of Malignant Tumors of Female Genital Tract. F. R. Smith, New York.—p. 218.
Role of Peritoneoscopy in Abdominal Surgery. J. C. T. Rogers, Urbana.—p. 222.
Volvulus of Cecum. R. M. Norris, Jacksonville.—p. 228.
Susceptibility to Paralysis in Poliomyelitis. W. L. Aycock, Boston.—p. 231.
Congenital Hemolytic Jaundice. C. D. Branch, Peoria.—p. 235.
Factors Influencing the End Results of Surgery for Duodenal Ulcer. J. R. Buchbinder, Chicago.—p. 239.
Allergy to Therapeutic Substances. S. M. Feinberg, Chicago.—p. 244.
Surgery of Carcinoma of Colon and Rectum. R. K. Gilchrist, Chicago.—p. 249.
Observations on Coronary Syndrome. H. H. Cole, Springfield.—p. 252.

Feasibility of Present Quarantine Methods.—Hoyne states that the usual quarantine methods have failed and that the only foolproof method for suppressing contagious diseases is immunization. Vaccination against smallpox is the outstanding example in this field of endeavor. The value of diphtheria immunization closely follows that of vaccination against smallpox. There was no noticeable suppression of diphtheria until active immunization was introduced. The control of typhoid is another striking example of the value of active immunization. Provisions for the prevention of tetanus, scarlet fever and whooping cough may in time join the ranks. Placarding of the home of the patient with measles is of no scientific value and indirectly may do harm in that the dread of the red quarantine

sign and the possible economic hardship that may result often may cause the parents to hesitate to call a physician when medical attention is most needed. Scarlet fever has not been suppressed by present quarantine measures. Unlike measles, it does not occur in frequent waves of high and low incidence but maintains a comparatively even yearly prevalence. An explanation for this is probably the constant presence of scarlet fever carriers. This is true with respect to immune carriers, and it must occur also to an extensive degree among convalescent carriers arbitrarily quarantined in accordance with public health regulations. From the standpoint of control, it is doubtful that quarantining for poliomyelitis, whooping cough or chickenpox really accomplishes any good. Sometimes rules of quarantine are applied without knowing whether quarantine does any actual good. The author states that these remarks are not intended to belittle proper isolation of patients with communicable diseases. And, as it is neither possible nor feasible to undertake the hospitalization of all patients with contagious disease, proper isolation measures at home will be more readily carried out if the restrictions placed about the family are reasonable. The contagious disease patient should be segregated for the duration of his infectivity. Perhaps in the future contagious disease hospitals will be used primarily only for patients who are so severely ill that hospital care is required and for patients whose contagious disease demands strict quarantine. With these exceptions all other patients with the common contagious diseases may perhaps be isolated in their homes without danger to the community at large and without emblazoned signs proclaiming their misfortune. However, neither quarantine nor isolation but immunization and vaccination will suppress contagious diseases.

Iowa State Medical Society Journal, Des Moines

31:373-414 (Aug.) 1941

Head Infections in Practice of Medicine. G. E. Shambaugh Jr., Chicago.—p. 373.
Vertigo. W. D. Abbott and H. Schuknecht, Des Moines.—p. 378.
Hospital Epidemiology. R. H. Heeren, Iowa City.—p. 385.
Diabetes Mellitus with Pancreatic Calculi and Malignant Endocarditis: Case Report. E. B. Winnett and J. W. Caldwell, Des Moines.—p. 388.
Retropositions and Incarceration of Pregnant Uterus. S. W. Barnett, Cedar Falls.—p. 390.
Chronic Inversion of Uterus: Case Report. Arline M. Beal, Davenport.—p. 392.

31:415-456 (Sept.) 1941

More Common Nervous Diseases of Spinal Cord. A. Verbrugghen, Chicago.—p. 415.
Etiology and Treatment of Iron Deficiency Anemias. W. M. Fowler and Adelaide P. Barer, Iowa City.—p. 420.
Scapula Alata. W. E. Foley and J. Wolf, Davenport.—p. 424.
Clinical Aids in Diagnosis of Heart Diseases in General Practice. O. Neurath, Sigourney.—p. 426.
Acute Leukemia: Case Report. D. J. Haines, Des Moines.—p. 430.
Occurrence of Avian Tubercle Bacilli in Dressed Poultry. Helen E. Bliss and R. Rooks, Iowa City.—p. 432.
Influenza Meningitis Treated Successfully with Sulfathiazole. R. A. Patterson and R. C. Crumpton, Webster City.—p. 433.

Public Health Reports, Washington, D. C.

56:1777-1818 (Sept. 5) 1941

*Diverse Etiology of Epidemic Influenza. E. H. Lennette, E. R. Rickard, G. K. Hirst and F. L. Horsfall Jr.—p. 1777.
New Industrial Skin Cleanser. L. Schwartz.—p. 1788.
Disabling Sickness Among 2,000 White Male Glass Workers. W. M. Gafafer.—p. 1791.
Ornithodoros Turicata: The Male; Feeding and Copulation Habits, Fertility, Span of Life and Transmission of Relapsing Fever Spirochetes. G. E. Davis.—p. 1799.
Two Strains of Endemic Typhus Fever Virus Isolated from Naturally Infected Chicken Fleas (Echidnophaga Gallinacea). G. D. Brigham.—p. 1803.

Diverse Etiology of Epidemic Influenza.—Lennette and his associates present evidence which shows that acute phase serums were usually obtained between the first and fourth day after onset from patients who provided throat washings and from numerous other patients in each epidemic. Convalescent serums were obtained from the same patients between two and three weeks later. Throat washings were obtained during the first few days of illness from patients with representative and clinically typical influenza. The presence of influenza A or B virus in a throat washing was determined by inoculation of ferrets or Syrian hamsters. The animals' clinical course was followed carefully. Ten to fourteen days after inoculation they were bled from the heart, and the serum so obtained was run in neutralization tests against approximately thirty 50 per cent mortality doses of influenza A or B virus. Neutralization and complement fixation tests with influenza A virus were carried out with acute phase and convalescent serums obtained from a number of representative cases in each of fifteen outbreaks occurring in six states in 1940 and 1941. In all but three of the outbreaks the evidence indicated that influenza A virus was causally related to more than 50 per cent of the cases studied. On the other hand, evidence that influenza B virus had caused infections was obtained in only 6 cases, in 4 of which there was also evidence of infection by influenza A virus. The many cases in which indication of infection by either virus was not obtained are striking, particularly as these cases were clinically indistinguishable from those in which no difficulty was encountered in establishing an etiologic diagnosis and they occurred simultaneously with the others in each outbreak. It is suggested that these cases (30 per cent of all cases studied) resulted from infection by an agent or agents as yet unknown but distinct from either influenza A or B virus. In these cases no increase in antibodies against either of the two known influenza viruses was demonstrable during convalescence, and throat washings from them, when inoculated into ferrets or hamsters, did not produce antibodies against either virus. On the basis of these completely negative data it seems logical to suggest that there exists at least one additional infectious agent, antigenically distinct from either influenza virus, capable of causing clinical influenza. Since even in single institutional outbreaks of influenza A, influenza B and influenza of unknown cause sometimes occurred simultaneously, it is suggested that epidemics of influenza may frequently have diverse causes. The fact that in a few cases a specific antibody response to both viruses was demonstrated suggests that simultaneous or almost simultaneous infection by the two agents occurred in these cases. Hereafter the finding that some cases in an influenza epidemic resulted from a certain virus will not be adequate evidence that the whole or the major part of the epidemic was due to the one virus, unless of course all the cases are adequately studied.

Southern Surgeon, Atlanta, Ga.

10:615-694 (Sept.) 1941

Surgical Treatment of Adenomatosis of Colon. F. W. Rankin, Lexington, Ky.—p. 615.
Certain Anatomic and Physiologic Aspects of Intervertebral Disk. F. K. Bradford, Houston, Texas.—p. 623.
Treatment of Recent Compound Wounds. R. A. Griswold, Louisville, Ky.—p. 630.
Obstructive Jaundice Caused by Perforating Duodenal Ulcer. A. C. Scott Jr., Temple, Texas.—p. 637.
Chemotherapy of Infections of Central Nervous System. C. C. Nash, Dallas, Texas.—p. 648.
Duodenal Drainage in Diagnosis of Gallbladder Disease. H. C. Myers, Philippi, W. Va.—p. 653.
Indications for Surgery in Duodenal Ulcer. J. L. Bradfield, Dallas, Texas.—p. 663.
Cancer of Larynx: Diagnosis, Treatment and Results, with Observations on Relation of Benign Tumors to Cancer. G. Tucker, Philadelphia.—p. 671.
Use of Sulfanilamide Powder in Abdominal Surgery. Q. B. Lee, Wichita Falls, Texas.—p. 680.

Virginia Medical Monthly, Richmond

68:497-562 (Sept.) 1941

Psychotherapy of Children. L. Kanner, Baltimore.—p. 498.
Dr. John Minson Galt and the Williamsburg Asylum. P. G. Hamlin, Williamsburg.—p. 502.
Cancer of Larynx. E. G. Gill, Roanoke.—p. 509.
Nickel Pectinate in Treatment of Peptic Ulcers. F. M. Horsley, Schuyler.—p. 512.
Cantharides Poisoning. J. P. Lynch, Richmond.—p. 513.
Anemia: Classification and Treatment. B. S. Leavell, University.—p. 515.
Surgical Treatment of Strabismus. W. P. McGuire, Winchester.—p. 522.
Incidence of Syphilis in Industrial Practice. R. Brittain and J. S. Pearson, Jewell Ridge.—p. 525.
Radical Resection of Pancreas for Cancer. M. H. Todd, Norfolk.—p. 526.
Aids in Diagnosis of Mental Retardation. A. E. Grigg, Haddonfield, N. J.—p. 528.
Gonadotropin Excretion During Menstrual Cycle. F. R. Woodward and R. J. Main, Richmond.—p. 530.
Some Responsibilities of Medical Profession. G. G. Hankins, Newport News.—p. 531.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Heart Journal, London

3:145-204 (July) 1941

*Tricuspid Stenosis, with Particular Reference to Diagnosis and Prognosis. W. T. Cooke and P. D. White.—p. 147.

Idiopathic Cystic Medial Necrosis of Aorta. D. H. Davies.—p. 166.

Electrocardiogram of Stokes-Adams Attack. J. Parkinson, C. Papp and W. Evans.—p. 171.

Total Thyroidectomy for Heart Failure: Unusual Case. W. R. Trotter and K. C. Eden.—p. 200.

Tricuspid Stensosis.—Cooke and White studied 30 cases of stenosis of the tricuspid valve proved post mortem and 12 cases observed during life. In 3 of the 12 the diagnosis was confirmed by necropsy; in the other 9 patients, who are still alive, the disease almost certainly has been correctly diagnosed. The 30 cases were encountered among 4,300 in which necropsy was done, including 217 cases of rheumatic heart disease, in 47 of which the tricuspid valve was involved. In 17 of these the disease was probably of no clinical significance. Twenty-one patients were male and 21 female in the combined group of 33 patients on whom necropsy was done and 9 with clinical disease. The age of the patients at death ranged from 10 to 59 years. Disease of the tricuspid valve may be divided into two types: that occurring in the first three decades of life in patients who die of rheumatic fever and that in older patients in whom the mechanical factors induced by the lesions play an increasingly important part in death. The symptoms in the younger group were almost indistinguishable from those of rheumatic fever, but the course of the older group was characterized by relatively long survival after the appearance of congestive symptoms and signs indicative in most other circulatory disorders of death in the near future. Therefore, owing to the "safety valve" function of the tricuspid valve, older patients may live many years if severe rheumatic fever does not recur. No one sign is pathognomonic of stenosis of the tricuspid valve, but the signs in the order of their importance, especially in combination, are mid-diastolic murmur localized over the tricuspid area, chronic and well defined systolic pulsation of the deep jugular veins, ascites in the absence of pulmonary congestion, enlargement of the heart shadow to the right, deviation of the esophagus to the left, cyanosis and sometimes jaundice, enlargement of the liver with or without pulsation, persistently raised venous pressure and prolonged circulation time of the right side of the heart.

British Journal of Dermatology and Syphilis, London

53:231-268 (Aug.-Sept.) 1941

Endocrine Factors in Acne Vulgaris. E. L. Cohen.—p. 231.

Molluscum Contagiosum and Sulfapyridine. J. Sommerville.—p. 255.

British Journal of Ophthalmology, London

25:397-460 (Sept.) 1941

The Problem of Asthenopia. F. A. Williamson-Noble.—p. 397.

Special Case of Melanosis Fundi: Bilateral Congenital Group Pigmentation of Central Area. A. Loewenstein and Janet Steel.—p. 417.

Wernicke's Syndrome Complicating Pregnancy and Associated with Ocular Complications: Report of Case. G. Black.—p. 424.

Orbital Dermoid (Lined by Skin and Modified Conjunctiva). P. M. Moffatt.—p. 428.

Von Recklinghausen's Disease with Diffuse Neurofibromatosis of Choroid: Case. S. Robson, W. Blackwood and H. A. Cookson.—p. 431.

Primary Retinal Infiltration of Pale Pulverulent, Stellate and Purpuric Character and Accompanying Nephritis Is a Pathognomonic Sign of Azotemic Anemia. H. Lagrange.—p. 443.

British Journal of Radiology, London

14:255-274 (Aug.) 1941

Survey of Depth Dose Data. W. V. Mayneord and L. F. Lamerton.—p. 255.

Note on Depth Doses in Fields of Irregular Shape. J. R. Clarkson.—p. 265.

Breast Cancer: Study of Train of Events Which May Follow Radical Removal and Postoperative X-Ray Therapy. F. Roberts.—p. 269.

Journal Obst. & Gynaec. of Brit. Empire, Manchester

48:421-548 (Aug.) 1941

*Results of 500 Cases of Wertheim's Operation for Carcinoma of Cervix. V. Bonney.—p. 421.

Hydatidiform Degeneration of Placenta in Pregnancy of Twenty-Nine Weeks' Duration Associated with Normal Fetus: Case. H. H. F. Barns.—p. 436.

Early Involvement of Ovaries in Carcinoma of Body of Uterus. H. H. F. Barns.—p. 443.

Fetal Mortality in Postmaturity. S. G. Clayton.—p. 450.

Survey of Results of Repair and Amputation of Cervix. E. Solomons.—p. 461.

Cullen's Sign. S. Way.—p. 473.

Renin and Pregnancy: Experimental Study of Renal Pressor Substance in the Pregnant Animal. R. J. Kellar and J. K. Sutherland.—p. 487.

Infection of Bartholin's Gland with Bacillus Paratyphosus B. A. W. Purdie.—p. 495.

Localization of Placental Site by Tomography. O. Lloyd and E. Samuel.—p. 499.

Acute Inversion of Urinary Bladder During Parturition. O. S. Heyns.—p. 503.

Contributions to Gynecologic Pathology. B. Gilbert.—p. 508.

Precocious Puberty Due to Granulosa Cell Tumor of Ovary. C. J. Fuller and R. W. Smith.—p. 513.

Rupture of Uterus During Pregnancy. D. F. Anderson.—p. 518.

Leukoplakic Vulvitis Necessitating Cesarean Section. V. B. Green-Armytage.—p. 521.

Intravaginal Technic for Manchester and Anterior Colporrhaphy Operations. P. Malpas.—p. 523.

Two Unusual Cases of Cesarean Section. J. D. S. Flew.—p. 526.

Four Patients Seen Since the Bombardment of London Showing Unusual Length of First Stage of Labor. R. C. Brown.—p. 529.

Wertheim's Operation.—Bonney performed 500 Wertheim operations for cervical carcinoma; the follow-up study for 415 covers ten years and that for the others eight years. Most of the patients were between 35 and 60, 36 were more than 60, 34 between 30 and 35 and only 10 less than 30. In only 17 was the growth a pure columnar cell adenocarcinoma; in the rest it was squamous cell, though a tendency to columnar formation was observed in some. The five year cure rate among the 500 women was 40 per cent, but if the 36 who were lost sight of or died of other diseases are deducted the rate was 43 per cent. The incidence of recurrence was 38 per cent, or 41 per cent if those lost sight of and dead of other diseases are deducted. About 65 per cent of the recurrences occurred within two years of the operation. Irradiation or excision of the secondary growth was uniformly unsuccessful. The operative death rate for the 500 patients was 14 per cent, or 70 deaths, death usually occurring within a few hours or days of the operation, in some cases within one or two weeks and in a few after many weeks. Among the 500 women there were 200 whose glands were involved. The five year cure rate for those whose glands were not involved was 53 per cent or 58 per cent if patients lost sight of and dead of other diseases are excluded; whereas for the others the respective percentages were 22 and 23. A similar contrast is exhibited in the operative mortality, respectively 10 and 20 per cent. The relative ten year cure rate for the 415 patients was 31 per cent, or 36 per cent if the 49 lost sight of and dead of other disease are deducted. The author believes that operation has three advantages over radium treatment: 1. It is much easier to conceal from the patient the nature of the disease. 2. Since all that can be done has been done at the operation and recurrence, if it comes, is incurable, subsequent visits are unnecessary and undesirable, as they may arouse suspicion. 3. Operation, unlike irradiation, cures a proportion of patients whose regional glands are cancerous when they present themselves. However, the choice depends on whether the ultimate skill is available.

Journal of Physiology, Cambridge

100:125-232 (Sept.) 1941

Differentiation of (Amphibian) Water Balance Principle from Antidiuretic Principle of Posterior Pituitary Gland. H. Heller.—p. 125.

Effect of Insulin Administration on Insulin Content of Pancreas. C. H. Best and R. E. Haist.—p. 142.

Observations on Relation of Histamine to Reactive Hyperemia. H. Kwiatkowski.—p. 147.

Afferent Discharges to Cerebral Cortex from Peripheral Sense Organs. E. D. Adrian.—p. 159.

Gaseous Tensions in Brain. F. C. Courtice.—p. 192.

Effect of Oxygen Lack on Cerebral Circulation. F. C. Courtice.—p. 198.

Photosensitizing Action of Buckwheat (Fagopyrum Esculentum). Harriette Chick and P. Ellinger.—p. 212.

Further Evidence Concerning Role of Hypothalamus in Induction of Ovulation in Rabbit Following Injections of Copper Acetate. G. W. Harris.—p. 231.

Anales de la Soc. de Puericultura, Buenos Aires

7:59-200 (April-June) 1941. **Partial Index**

*Liver Therapy in Diarrhea in Infants. J. E. Virasoro, F. J. Roca and F. Roca.—p. 114.

Liver Therapy in Diarrhea in Infants.—Virasoro and his collaborators report good results in the treatment of benign diarrhea of infants by injections of liver extract, which were given one every other day, up to a total of five to eight injections. The toxic conditions of the patients disappeared early in the course of the treatment. The number of colon bacilli in the feces diminished. The appetite, digestion and general condition of the patients improved. There was a rapid favorable response of the patients to diet and hygiene, with consequent increase of weight and permanent control of the disease. The authors believe that apparently benign diarrhea in infants is due to insufficiency of the liver. The condition results in the development of either chronic or recurrent gastrointestinal and nutritional disorders which may become acute and can be controlled by early administration of liver extract. The authors' article is a preliminary note. Fifteen cases are reported.

Klinische Wochenschrift, Berlin

20:433-464 (May 3) 1941

*New Observations on Depot Insulin in Treatment of Diabetes Mellitus. A. Schweers.—p. 433.
Vitamin Action of Nonsaturated Fatty Acids. E. Schneider.—p. 437.
Clinical Investigations with Orally Active Estradiol Compounds. W. Reifferscheid and G. Schmidt.—p. 440.
Acute Erythroblastosis and Erythroblastic Reaction. R. Stodtmeister.—p. 444.
Problem of Demonstrating Autogenous Cancerigenic Substances. H. Gummel.—p. 448.
Origin and Development of Arch-Shaped ST Interval and So-Called Intermediary Deflection and Their Connection with S-Axis. L. Unghváry.—p. 449.
*Differential Diagnostic and Prognostic Significance of Repeated Parallel Determinations of Erythrocyte Sedimentation Speed, of Costa's Reaction and of Weltmann's Coagulation Band. O. Lippross and H. Engel.—p. 453.

Depot Insulin in Diabetes Mellitus.—Schweers discusses the retarded action of depot insulins, pointing out that there are three different types. In the first type insulin is combined with protamine and zinc, in the second with the vasoconstrictive hormone of the posterior lobe of the hypophysis, and in the third with substances which retard resorption. Exact comparative determination of the depot action requires hourly blood sugar controls; observations during a period of absolute fasting may lead to erroneous conclusions. Numerous clinical observations convinced the author that hypoglycemia can be avoided by the proper allotment of carbohydrates to the different meals. From three fifths to two thirds of the carbohydrates should be given at the midday meal and small amounts at the morning and evening meals. Acetonuria was especially favorably influenced by the depot insulin containing the hormone of the anterior lobe of the hypophysis. The addition of small quantities of zinc to the insulin to which comparatively large amounts of the hormone of the posterior hypophysis has been added makes it possible to retard the action to such an extent that a reduction of the blood sugar can be observed until the evening or even until the following morning. There was no clinical evidence that the hormone of the anterior lobe of the hypophysis influenced the smooth musculature (intestine, gallbladder, urinary tract) or the cardiovascular system. Elimination of water and sodium chloride was not noticeably affected; in a few cases the addition of the hormone of the posterior hypophysis even seemed to exert a favorable effect on the water and salt retention brought on by the insulin.

Erythrocyte Sedimentation, Costa's and Weltmann's Reactions.—Lippross and Engel cite shortcomings of the sedimentation reaction, as well as of Costa's and Weltmann's reactions. On the basis that the nonspecific reactions of Costa and of Weltmann are at least partly determined by other factors than is the sedimentation speed of the erythrocytes, they made two hundred parallel investigations with these three tests on 53 patients with various disturbances. They were able to show that parallel tests often clarify obscurities of the one or the other of the reactions and provide a better insight than does the employment of only one of these tests. From the relative deviations of the simultaneously obtained results of all three reactions in the course of such diseases as pulmonary tuberculosis, chronic pneumonia, pulmonary abscess, endocarditis, chronic colitis, diseases of the liver and bile passages, thyrotoxicosis, pernicious anemia, leukemia and neoplasms, it was often possible to draw differential diagnostic and prognostic conclusions. The authors recommend parallel determinations of the three tests.

Geneeskundig Tijdschr. v. Nederl.-Indië, Batavia

81:1001-1080 (May 13) 1941

*Studies on Rabies. Maria J. Otten-Van Stockum.—p. 1002.

Studies on Rabies.—Otten-Van Stockum discusses the results in rabies of using a living, formaldehyde treated, fixed virus from monkeys. She also presents experimental studies with formaldehyde treated vaccine and comparative results with phenolized vaccine. She concludes that the mortality from rabies among treated subjects is worthless as a basis for the estimation of the effect of a treatment unless the incubation period is taken into consideration, that is the time that has elapsed between the bite and the onset of the treatment. If account is taken of this, all known methods of treatment fail and only the fixed virus from monkeys, either living or killed by formaldehyde, produces satisfactory results. This is corroborated in animal experiments, provided certain precautions are taken. Experimental investigations carried out over a period of years demonstrated that the efficacy of a fixed virus vaccine is determined by the species of animal used for the preparation of the vaccine as well as by the nature and concentration of the employed rabicidal agent. In using monkey brains (in 10 per cent emulsion) and a 0.15 per cent solution of formaldehyde, with five days' incubation at 37 C. (98.6 F.), a fixed virus vaccine is obtained which proves highly effective in animal experiments as well as in the treatment of human beings.

Acta Obst. et Gynec. Scandinav., Stockholm

21:105-198 (No. 2) 1941

Endocrine Treatment of Amenorrhea. A. Westman.—p. 105.
Pathogenesis of External Endometriosis: Remarks on Behavior of Epithelial Cells on Heterotopic Mucosa. C. von Numers.—p. 151.
Observations on Early Getting Up After Gynecologic Operations or Deliveries. P. Vara.—p. 168.
*Histidinuria, Rapid Method for Detection of Pregnancy. V. Westberg.—p. 180.

Histidinuria, a Rapid Method for Determination of Pregnancy.—Westberg presents a short survey of the chemical properties of histidine and of the various reactions for demonstrating it. He gives particular attention to the methods of Kapeller-Adler (*Wien. klin. Wchnschr.* **47**:168 [Feb. 9] 1934; abstr. THE JOURNAL, April 14, 1934, p. 1265; *Klin. Wchnschr.* **15**:1728 [Nov. 21] 1936; abstr. THE JOURNAL, Jan. 23, 1937, p. 341), which he employed in his own studies. Chloroform is quite satisfactory as a means of preserving histidine in the urine. The author's studies were made on specimens of urine from more than 1,000 persons. These included 680 women with intrauterine pregnancy, 11 with extrauterine pregnancy, 61 who had had an abortion, 238 nonpregnant women, 19 men with pulmonary tuberculosis and 3 with Cushing's syndrome. On 14 women in the puerperium serial tests were made. The histidine reaction was negative in 6.34 per cent of the women with normal pregnancy; however, there were only 3.26 per cent of negative reactions among the women who were in the first three months of pregnancy. The histidine reaction was positive for all women with extrauterine pregnancy. The urine of nonpregnant women and of men gave positive reactions in 1.55 per cent of the cases. Histidine is eliminated during the earliest stage of pregnancy; in 7 cases the reaction was already positive before one menstruation had been missed. The serial tests on women in the puerperium disclosed that the secretion of histidine decreases rapidly after normal delivery; the same seems to be true after induced abortion. Comparative mouse, rabbit and histidine tests in 171 cases seemed to indicate that the histidine reaction can compete with the mouse and rabbit tests.

Book Notices

Accidental Injuries: The Medico-Legal Aspects of Workmen's Compensation and Public Liability. By Henry H. Kessler, M.D., Ph.D., F.A.C.S., Medical Director, New Jersey Rehabilitation Clinic, Newark. Second edition. Cloth. Price, $10. Pp. 803, with 202 illustrations. Philadelphia: Lea & Febiger, 1941.

Ever since workmen's compensation enactments forced on the physician the unenviable job of estimating work capacity or earning power after injury, the medical profession has sought to establish some element of uniformity in disability evaluation. Certainly the first edition of Accidental Injuries should be regarded as one of the earliest and longest steps taken to eliminate guesswork and to substitute dependable and rational standards to which all concerned with indemnification for injury might look for authoritative guidance. The solution of these medicolegal problems is about the most elusive in the whole socioeconomic field, but books of this kind do hold out some hope that eventually administrative methods can be so reorganized as to allow medical testimony to be offered in personal injury cases with every incentive to be candid and unbiased rather than the exact reverse. Only the full title of the book gives complete insight into the extensive character of its subject matter, since it does treat of the whole field of medicolegal relationships in workmen's compensation and public liability. Relatively little discussion is assigned to diagnosis and treatment as such, although there are a great many comments directed at differentiating between actual as against spurious physical impairment. The present revision does not depart in any considerable degree from the plan of the earlier work. The introductory chapters define and classify the motivation for workmen's compensation and the varying aspects of practical application in our states and territories. Many of the observations in these chapters and in those devoted to the physiology and pathology of trauma are in the author's characteristic philosophic vein. Kessler points out that, although not originally so intended, workmen's compensation contained within it the seed for all subsequent social security legislation—sickness, accident, unemployment and old age insurance. To be sure, it has required the connivance of physician, lawyer, administrator and beneficiary to accomplish this result, both designedly and unwittingly. Every one agrees that such things ought not to be, but the weight of custom and procedure has prevented easy transition to better, fairer and more effective administration. Certainly, one element of reform long overdue is the elimination of prolonged medical controversy in the presence of the claimant, which condition in certain jurisdictions is already being partially corrected through reliance on experienced medical advisory personnel.

The chapters discussing disability in relation to specific or anatomic parts or regions and in relation to the occupational diseases likewise follow the original method of organization. Dr. Andrew Rados has rewritten the chapter on the eye and has incorporated in full the report of the Committee on Compensation for Eye Injuries of the American Medical Association as the standard method of adjudging visual impairment.

Throughout the book are numerous pertinent citations indicating the present trend of decisions in workmen's compensation administration which are an additional reflection of extensive clinical and medicolegal experience developed through long association with the New Jersey Workmen's Compensation Bureau and the New Jersey Rehabilitation Clinic. Certainly no one who reads this work can escape the clear implication that workmen's compensation does not realize a complete social objective through programs of accident prevention and indemnification alone but through the reestablishment of the disabled worker quickly and competently as a self-sustaining unit in the community.

Medicinal Herbs and Their Cultivation. Ministry of Agriculture and Fisheries, Bulletin No. 121. Paper. Price 6d. Pp. 22. London: His Majesty's Stationery Office, 1941.

The importation into England of crude drugs has been seriously curtailed by the war. This booklet is intended to supply information relating to medicinal plants for which there is an urgent demand and which can be grown in that country. In the foreword appears a statement that a scheme under the egis of the Ministry of Health has been formulated to increase home grown supplies of digitalis, henbane, belladonna and stramonium. In twenty-two pages the booklet discusses briefly the characteristics, cultivation and harvesting of sixteen cultivated herbs, nine wild herbs and seven so-called oil-containing herbs. While some important drugs are included in these lists, it is difficult to understand why in times of emergency agricultural resources and industry should be devoted to the cultivation of such items as aconite, chamomile, pennyroyal, peppermint, valerian, dandelion, buckthorn, elder flowers, comfrey, coriander, parsley, anise and fennel. Somebody in the Ministry of Agriculture and Fisheries appears to have been badly advised on therapeutics, and it would seem the course of wisdom to concentrate any surplus acreage on the growth of digitalis, belladonna, opium, poppy and stramonium, among others.

The Care of the Aged (Geriatrics). By Malford W. Thewlis, M.D., Attending Specialist, General Medicine, United States Public Health Hospitals, New York City. Third edition. Cloth. Price, $6. Pp. 579, with 50 illustrations. St. Louis: C. V. Mosby Company, 1941.

Specialization in medicine proceeds at a swift pace. Not only has the human body been subdivided into anatomic regions and disease entities, but in pediatrics and geriatrics we find the development of specialties by segmentation of the life span. The specialty of pediatrics, which may be said to have started somewhere in the vicinity of 1860 through the inspiration of Jacobi, has thus far outstripped geriatrics in importance. Geriatrics, like old Rip Van Winkle, is just beginning to awaken from a long slumber. While the renewal of interest in this subject has been ascribed to the increase in the life span, it is more likely a direct expression of the fact that medicine as a science is growing up and getting older too.

Nascher was the first to write a textbook of geriatrics. His book appeared in 1914. The first edition of this book was published in 1919. The present volume is an extensive rewriting of the second edition, which appeared seventeen years ago. The book, as the name suggests, is a guide for those who are directly concerned with the practical care of the aged. It does not pretend to be a scientific treatise on the fundamental mechanisms of the aging process. Essentially the author has taken the common knowledge of medical science and applied it with uncommon good sense to the understanding and treatment of the manifestations of senescence. It is gratifying to know that many of the recently christened advances in scientific knowledge and therapeutics are recognized in a book devoted to the veneration and preservation of the aged. For instance, the theory of Goldblatt on the etiology of hypertension is included; the sulfonamide drugs up to and including sulfathiazole are employed in the recommended therapeutics; the technic of making cutaneous tests with polysaccharides of pneumococci as well as the newer atropine-like synthetics are discussed.

Throughout the volume one finds the most gratifying examples of balanced judgment and common sense; the section on the treatment of arthritis and the last section of the book, entitled "The Mathematical Angle," are conspicuously so. On the other hand it is a curious thing to find hand in hand with so many excellent presentations other material that is either outmoded or open to serious criticism. For instance, the author refers to pernicious anemia, diabetes, hyperthroidism and leukemia as diseases of exhaustion. He states that liver extract by mouth is said to be of benefit for amebiasis. Laxatives containing sulfur are recommended as the drug of choice in the treatment of constipation associated with hemorrhoids. The author retains the refuted notion that there is something mysterious about obesity. He says "It is not always a question of overindulgence of food, since reduction in food does not always control obesity." In the treatment of severe diabetes crystalline insulin is recommended "if quick action is required," contrary to the best opinion on the subject. The statement that "High caloric diets cause increased endocrine activity, in particular, a high carbohydrate intake affects the islets and a high protein diet puts a 'strain' on the thyroid gland" is subject to serious question. An outstanding departure from the present day expert consensus is the chapter on fibrositis. The author uses this term to include such conditions as "bursitis, lum-

bago, muscular rheumatism, neuritis, panniculitis, sciatica and myalgia." Among the causes of "fibrositis" the author lists indiscretions in diet and vitamin deficiencies as well as describing a relationship to loss of sodium chloride during vigorous exercise. One gets the impression from the book that alcohol is an unmitigated evil. For instance, "alcohol increases the appetite by dulling the brain; thus distention of the stomach may exist without the patient's being aware of it." One is reminded of the remark ascribed to Dr. Llewellys Barker the elder that a man who takes alcohol regularly below the age of 40 is a fool but the man over 40 who takes none is a bigger fool.

Despite the relatively few faults, the volume will be found decidedly worth while by those who are engaged in the care of the aged. The flaws are in its theoretical and technical fine points, not in the practical information and common sense on which its usefulness will rest.

Physical Therapy for Nurses. By Richard Kovács, M.D., Clinical Professor and Director of Physical Therapy, New York Polyclinic Medical School and Hospital, New York. Second edition. Cloth. Price, $3.25. Pp. 335, with 99 illustrations. Philadelphia: Lea & Febiger, 1940.

A review of the earlier edition in these columns discussed in suitable detail the merits of a nontechnical exposition which attempted to orient those employed as special aids in the administration of physical therapy. Popular demand for this informative textbook has provided the author with that looked for opportunity to arrange and improve its contents in accordance with accepted trends and progress in the field. This edition therefore is not only enlarged and revised but shows an increasing maturity in presenting the essential knowledge of electrophysics and biophysics suitable for the average nurse as a background to her training in the application of physical measures. The work is essentially a manual for nurses and provides concise evaluation of the nature and physiologic effects of certain physical and mechanical forces for therapeutic purposes. The text embraces the clinical action of heat, light, electricity, hydriatics, massage and exercise, measures which in their therapeutic detail are now recognized to require efficient assistance for their successful execution. That the subject matter has been materially enlarged is indicated by the addition of four new chapters which review the historical background of this discipline and evaluate the benefits and limitations of short wave diathermy, artificial fever therapy and colonic irrigation. Throughout these new chapters and the revised text, the virtue which commends itself foremost is the clarity of diction and the absence of padding. An object example is the compact exposition of the section on exercise, written by Dr. McGuinness, and because perfection has been closely approached throughout this volume, a single flaw that tends to mar this contribution, as a painful anachronism is found in the chapter on the history of physical therapy. It is choppy in style and often lacks that critical balance of statements authenticated by fact. Historians certainly will question the assertion which by innuendo credits the discovery of the physiologic action of the high frequency current to Tesla, when as a matter of fact d'Arsonval is credited with its discovery and first enunciation on Feb. 24, 1891. Nor will the student of this discipline consider its history complete without a review of the work of Franklin and Morton in the field of electrophysics. It is because of the general excellence of this work that the hope is advanced that its next edition will overcome the few loose ends in an otherwise valuable contribution.

Traffic in Opium and Other Dangerous Drugs for the Year Ended December 31, 1940. Report by the Government of the United States of America. U. S. Treasury Department, Bureau of Narcotics. Paper. Price, 25 cents. Pp. 105, with illustrations. Washington, D. C.: Supt. of Doc., Government Printing Office, 1941.

The immigration laws were amended on June 28, 1940 to provide for the deportation of any alien convicted of violation of any narcotic drug or marihuana law in the United States. Drug addiction in this country is steadily decreasing. The number of nonmedical drug addicts known is estimated at not more than one in every three thousand of population, a reduction of at least 66 per cent in the last twenty years. The decrease in the amount of ships reaching this country from abroad in the last two years, on account of the war, has been a factor in the decrease in the drug traffic. Actual deportations were accomplished during 1940 in only thirty-six instances, as compared with fifty-three deportations in the previous year. Secretary of the Treasury Henry Morganthau Jr. had the foresight to obtain for the United States a three year supply of crude opium for medical needs before the Mediterranean Sea was closed to shipping on account of the war. From this reserve the United States Treasury Department has also supplied narcotic drugs for the sick and injured of the many other countries whose supplies have been cut off because of the war.

The largest individual seizure of prepared opium occurred in the Philippine Islands and the next in importance in San Francisco, the amounts seized having been 15,670 and 6,879 Gm. respectively. Raw opium is still scarce in the illicit traffic, and in the latter half of the year the price remained rather constant at $300 for 1 pound bricks. Pedlers often demanded at San Francisco as much as $2 a grain for prepared opium. The shortage of all drugs of addiction in the illicit traffic was further evidenced by the increasing number of thefts of these drugs from drug stores and drug manufacturers and by the forging of prescriptions. There was an increase, however, in the smuggling of marihuana into the United States by seamen on boats touching Central and South American ports, as well as an increase in the smuggling of marihuana over the Mexican border. Several of the most horrible crimes committed by persons under the influence of marihuana are reviewed in this report.

The shortage of narcotic drugs has caused addicts and pedlers to make additional efforts to divert narcotics from medicinal sources. This fact has also led to a greatly increased consumption of paregoric. The case is cited of a druggist who did a moderate regular business. A check of his records, however, indicated that he had sold over 321 gallons of paregoric in two years. The druggist pleaded guilty to violation of narcotics laws and was sentenced to a year and a day in prison, fined $25 and placed on probation for five years. A doctor in Oklahoma in less than two years had purchased 19,500 quarter-grain tablets of morphine sulfate, and of these only 1,497 could be accounted for as having been administered by nurses in the hospital with which he was connected. This doctor was convicted and sentenced to three years in prison and fined $1,000. A doctor in Arkansas engaged in the illicit drug traffic in cooperation with two druggists. In nine months the drug store purchased 38,000 morphine tablets and in the same period the doctor had written prescriptions calling for 31,667 morphine tablets, all of which prescriptions were filled at this drug store. This doctor was sentenced to two years in the penitentiary and will be placed on probation for five years after he gets out. The two druggists also were sentenced to the penitentiary.

Officials of the Bureau of Narcotics delivered addresses on request in all parts of the country in a preventive educational effort to discourage the use of narcotics, particularly marihuana. Too much encouragement should not be taken from the present decrease in smuggling and importation of narcotic drugs, as the war situation readily accounts for much of the decrease. A resumption of the illicit traffic may be expected when shipping becomes more normal and the boundaries between the various countries can be crossed more readily.

Hospitals Under Fire but the Lamp Still Burns. Edited by George C. Curnock. Cloth. Price, 7s. 6d. Pp. 148, with 32 illustrations. London: George Allen & Unwin Ltd., 1941.

This little book does not attempt to give a full account of the bombing of British hospitals. It does, however, reflect to some extent the effects of bombing on institutions which care for women and children as well as for others, and it does reflect also the manner in which the people of London responded to the attacks that were made on them. The book is replete with illustrations and with anecdotes and is supplemented with a list of the heroes and heroines who were recognized with Distinguished Service medals and with other decorations for their heroic activities during the bombing of the hospitals. Obviously, unless one has been in immediate contact with such hazards it is almost impossible to appreciate the serious conditions that eventuate.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

LONG-STANDING SYPHILITIC INFECTION

To the Editor:—An obese Negro woman aged 35 complained of backache with radiation down the outer portion of the right leg and aching pain in the knees. General physical examination showed no abnormalities other than obesity and Argyll Robertson pupils. Tests of blood specimens taken at this time gave the following results: Kahn reaction, positive; Wassermann reaction, anticomplementary. Blood specimens sent to two other laboratories also showed a positive serologic reaction. Spinal puncture was attempted, but I was unable to reach the subdural space with the longest needle available, so that data on the spinal fluid are lacking. Roentgenograms of the lumbar portion of the spine reveal arthritic changes, and the backache complained of is not typical of tabes dorsalis. The patient states that eight years ago, at the time of a laparotomy, she was told that her blood was "O. K." She has never had treatment for syphilis, and there is no history of primary or of secondary lesions. I am unable to find any open lesions now. She is employed as maid and governess in care of two children and was so employed for two years before consulting me. Will you kindly advise me on the following points: 1. What is my obligation as to informing her employer of her condition? The patient herself has told the family that she must take treatments for impurities of the blood. 2. Will you kindly outline a suggested plan of treatment? Intravenous therapy will be difficult if not impossible because of the obesity.

M.D., Illinois.

ANSWER.—1. Although this patient's blood is said to have been normal eight years ago, the presence of Argyll Robertson pupils is a strong indication that the syphilitic infection is of long standing and therefore noninfectious. Under these circumstances the inquirer has no obligation to inform the patient's employer of the diagnosis, and to do so would probably be most unwise because of the possibility of creating syphilophobia in the employer's family.

2. A plan of treatment is difficult to outline without knowledge of the condition of the spinal fluid. In spite of the failure to obtain the spinal fluid on a first attempt, another effort should be made. Obesity is not an adequate reason for failure to secure spinal fluid, since extra long needles for lumbar puncture are available. If tests of the spinal fluid suggest that the patient has parenchymatous neurosyphilis (i. e. if the paretic formula is present) it would probably be desirable, in view of the potential difficulty of administering intravenous treatment, to initiate antisyphilitic treatment with quartan malaria. The quartan strain is suggested because a high proportion of Negroes are immune to tertian malaria. If, on the other hand, the spinal fluid shows only minimal or moderate abnormalities, it is suggested, in view of the difficulty of intravenous treatment, that six months to a year of treatment be initiated with courses of biweekly intramuscular injections of bismarsen (twenty to the course, dose 0.2 Gm.) alternated with courses of ten to twelve weekly intramuscular injections, each 0.2 Gm., of bismuth subsalicylate. At the end of six months to a year of this sort of treatment the spinal fluid should be reexamined and further treatment based on the results.

The chemotherapy suggested is also satisfactory as follow-up treatment for fever therapy with quartan malaria, should the latter prove necessary.

ESTRADIOL DOSAGE

To the Editor:—The Journal for March 22 contained an article by E. L. Sevringhaus on the value of estradiol as compared to similar substances. Does 600 biologic units represent an average dose? How often can that be given to women weighing 115-140 pounds (52-63.5 Kg.) whose sole symptoms are repeated flushings, say twelve in the twenty-four hours? Mild attacks of vertigo at infrequent intervals seem to be associated.

William T. Clarke, M.D., Los Angeles.

ANSWER.—The most potent tablet of estradiol for oral use contains 0.5 mg. and is labeled as giving 600 active biologic units. The milligram equivalent of this number of biologic units has varied in the past, but recently this figure apparently has represented a stable relationship. It should be realized that bioassays of estrogens vary considerably in the hands of different investigators or laboratories. The maximum tolerated dose of this material has never been determined or reported, but the use of 8 tablets daily, given 2 at a dose, is well known to be tolerated as well as useful in certain cases. Doses as low as 50 active biologic units have been employed but seem of little clinical value. The actual dosage for a given patient must be determined by trial as with many other estrogens.

INTRACTABLE PAIN ABOVE SYMPHYSIS PUBIS AFTER HYSTERECTOMY

To the Editor:—A white woman aged 27 had a hysterectomy some twenty-one months ago because of chronic pelvic inflammatory disease. Since that time she has gone to bed and refused to get up and walk, stating that the pain she suffers when on her feet is unbearable. The pain is about 1½ inches above the symphysis pubis, not in the skin or muscle, but it seems deeper. She says that the area of pain is about the size of the palm of one's hand and is constant and burning in character and not referred. I am of the opinion that she has a psychoneurosis but am convinced that she will never get up and walk unless this area is desensitized, for she has a definite phobia concerning it. Is there any method of nerve section or block that would be permanent and still not be too destructive? Please give me what information you can.

John T. Mosley, M.D., Winnfield, La.

ANSWER.—There appears to be a psychoneurotic element in the pain of which this patient complains, but everything possible should be done to rule out an organic basis. Since the pain is deep rather than superficial, it is worth while to inject the sympathetic nerves around the cervix. This is a chemical sympathectomy based on the surgical type of pelvic sympathectomy, which has proved to be helpful in cases of dysmenorrhea. The technic of injecting the sympathetic nerve plexus around the cervix is as follows:

The patient is placed in the lithotomy position and an intravenous or gas anesthetic given. The cervix is grasped with volsella and retracted to the right side. A lateral retractor placed in the left fornix will expose this area. A long needle attached to a syringe containing 85 per cent alcohol is passed horizontally through the vaginal mucosa alongside the cervix for a distance of 0.5 cm. The retractor is removed. The needle is then passed backward and outward for a distance of about 1.5 cm. at an angle of 45 degrees to both the sagittal and coronal plane to a point about 0.5 cm. from the side of the rectal ampulla. A finger in the rectum guides the needle to the proper place. After the needle reaches this site, it is withdrawn about 0.5 cm. and 1 cc. of the alcohol solution is injected. While this is being done the needle is kept slightly but constantly in motion. The needle is withdrawn entirely and the same procedure is carried out in the other fornix. Not more than 1 cc. of 85 per cent alcohol should be used on each side, because a larger amount may injure the nerve fibers which control bladder function. The alcohol injures the sympathetic nerves and thereby interrupts the sensory pathways.

PHLEBITIS WITH ITCHING AND EXCESSIVE HAIR

To the Editor:—About five months ago a woman aged 68 had phlebitis in the left leg. The occluded vein extended from the midthigh, curving down and around to the outside and back of the knee. Now the patient complains of an itching skin area. This area is behind and on the outside of the left knee, and the occluded vein goes down to and through this area. A striking feature of this case is that there is a growth of long hair following right over the curving occluded vein. This line of hair extends for about 12 inches exactly following the vein. The rest of the leg and the right leg are entirely devoid of hair. I should like to know if this is at all unusual and what the explanation might be. What treatment could be suggested for the itching, which apparently is due to this condition?

M. E. Monroe, M.D., Hartford, Wis.

ANSWER.—This is an unusual case; in fact, only 1 case of this kind has been found on record. Louste and Levy-Franckel (*Bull. Soc. de dermat. et de syph.* **36**:77, 1929) treated a woman aged 44 for a mild psoriasis and a varicosity in the right leg and thigh. She had had a hysterectomy at the age of 33 followed by artificial menopause. The dilated vein was injected three times in three weeks with a solution of sodium salicylate. When she returned over two months later, the vein was partly sclerosed and over it, extending from the lower part of the external surface of the thigh to the apex of Scarpa's triangle, was a narrow band of pigmented skin covered by hair. Other cases in which pigmented bands developed subsequent to chemical thrombosis have been recorded, but none in which hair grew. Louste and Levy-Franckel discuss the possible pathogenesis of the phenomenon and favor the view that it is due to a local dysfunction of the vegetative nervous system. They promised further reports on their projected research but these have not appeared, possibly because they could not reproduce the phenomenon. The condition cited in the query should be photographed, studied as carefully as possible and reported.

The itching can be mitigated by calamine lotion containing 0.5 per cent phenol and glycerin dabbed on as often as needed, or 1 per cent or more of menthol can be used in place of the phenol but not with it, for these two drugs neutralize each other. An alcoholic lotion containing 1 per cent phenol or several per cent of menthol may be more helpful, or solution of coal tar, N. F., may be used in the same manner.

WOOL UNDERCLOTHING FOR INFANTS

To the Editor:—Would you give an opinion about the use of wool for children in this climate (it is damp, the community is situated near the sea and it is cold at night)? I have had a patient tell me that I am "old fashioned and behind the times, indeed," if I consider putting a thin wool (and silk) shirt on a 9 month old baby. She states that no wool is to be used for children nowadays. I have neither read nor heard anything about this recently, and I felt unable to refute the statement. If it is true, I should like to know by whom and how such a conclusion was reached. What would be the harmful effects of the use of wool for babies or older children when they are kept in poorly heated rooms such as are so often found in the average home here? As long as the sun shines no clothing seems needed, but with the rainy season and the foggy, damp night and morning hours, I shall have to be convinced, and my mind is open to conviction.

Laura C. Killen, R.N., Rancho Santa Fe, Calif.

ANSWER.—The clothing of children varies according to the age of the child and the temperature of his surroundings. The underwear may contain a small amount of wool. Generally speaking, in larger towns and cities the houses are sufficiently heated (around 70 F.) in cold weather so that an infant remains comfortably warm indoors without wool in his underclothing. In fact, the infant is often too warm when his underclothing contains wool.

When he goes outdoors, sufficiently heavy overclothing should be worn to meet the temperature. However, for infants living in poorly heated rooms during the rainy season, as described by the inquirer, especially if the room temperature is below 65 F. during the day, some wool in the underclothing would be desirable.

The chief harmful effect of wool is that it occasionally irritates an infant's skin (producing itching and dermatitis). Some infants are allergic to it. Woolen clothing does not withstand boiling as well, and it may be too warm when the house warms up.

ULTRAVIOLET RAYS AND POLIOMYELITIS VIRUS

To the Editor:—A few cases of sporadic poliomyelitis have appeared in the neighborhood. A recent symposium on this subject in *The Journal* stated that oxidizing agents and ultraviolet rays kill the poliomyelitis virus. Would it be feasible to institute gargles of hydrogen peroxide or potassium permanganate for children (*a*) as palatable preparations and (*b*) given daily, without injury to the mucosa? Can ultraviolet rays be applied directly to the oral mucosa, say, daily, without injuring it? If so, what is the dose and how long should it be administered?

Henry Rosner, M.D., Brooklyn.

ANSWER.—Oxidizing agents and ultraviolet rays will kill poliomyelitis virus in vitro, but it is highly improbable that such agents could be made to approximate the virus in vivo. It would be useless to give such agents if the virus had entered the human system and had been absorbed via nerves at some point along the gastrointestinal tract between the mouth and the duodenum, and it would be impracticable to treat any one before that time. During epidemics it is conceivable that such agents might be tried in prophylaxis, but at best the effects would be fleeting. Should the virus be swallowed in the interim between applications, the disease might still result. Potassium chlorate, also an oxidizing agent, has been used in this disease, but experimental and clinical studies have demonstrated its uselessness. Ultraviolet rays will kill the virus of poliomyelitis if they strike directly a thin layer of virus suspension, but theoretically they will not penetrate the mucosa deeply enough, nor could they be applied long enough, to kill all the virus that might be present. Human beings cannot be continuously exposed, and since ultraviolet rays can be given only at intervals the virus could be swallowed between therapeutic exposures and the direct beneficial effects of the rays would be questionable.

PREPARATION OF SULFATHIAZOLE FOR APPLICATION TO EYE

To the Editor:—I have been engaged in the practice of the diseases of the eye, ear, nose and throat for fifty-one years and have had a limited experience with chronic lid trouble of various forms. I thought I would try sulfathiazole for this condition but I have not been able to make a solution, as the most of the drug will not dissolve in water. Can you give me any suggestions about the use of this drug in chronic lid troubles and how I can get a perfect solution of this drug that can be used in the eyes without pain or irritation?

Milton T. Jay, M.D., Portland, Ind.

ANSWER.—Successful treatment of any superficial infection by the local application of sulfathiazole (or of other sulfanilamide derivatives which are active in vitro) is dependent on the maintenance of an adequate concentration of the drug at the site of the infection. Since the effect of these drugs is primarily bacteriostatic rather than bactericidal, an adequate concentration must be maintained constantly and for a considerable period before the infection is eradicated. This is better accomplished in or about the eye by using sulfathiazole in ointment form rather than in liquid solution, because the latter is quickly diluted and carried away by the tears.

The clinical value of using sulfanilamide derivatives locally for various ocular infections has not been clearly established. Sulfanilamide and sulfathiazole ointments appear to be of value in the treatment of infected corneal ulcers and probably of certain types of superficial conjunctivitis, but this form of therapy is probably of little or no value in deeper infections (Guyton, J. S.: Local Use of Sulfanilamide Compounds in the Eye, *Am. J. Ophth.* **24**:292 [March] 1941). Little beneficial effect can be expected in marginal blepharitis, because the drug cannot easily reach the depths of the infected sebaceous and sweat glands.

Sulfathiazole is soluble in water or in physiologic solution of sodium chloride only to approximately 0.1 per cent at 37 C. A 5 per cent solution of sulfathiazole which is only slightly irritating to the eye can be obtained by dissolving the drug in a 10 per cent aqueous solution of triethynolamine. A 5 per cent ointment which is almost nonirritating to the eye can be prepared by mixing exceptionally fine sulfathiazole powder in a petrolatum-hydrous wool fat base. An even smoother and less irritating ointment can be prepared by dissolving the sulfathiazole in a small amount of triethynolamine before mixing it with the ointment base.

GLASSES FOR TESTING NIGHT BLINDNESS

To the Editor:—Is there on the market any reliable device—such as lenses of graded degrees of darkness—which could be used in testing vision by the Snellen chart or similar charts to reveal night blindness? I am not asking about more complicated testing apparatus, such as is used in refractions and other thorough eye examinations, but rather about a simple pair of glasses that might do in the tests of visual acuity, such as a nurse might give, and would indicate the need of a more adequate examination by an eye specialist.

Theodore M. Frank, M.D., Texas City, Texas.

ANSWER.—The series of Tscherning's photometric glasses made in Copenhagen is designed for this purpose. These have a light-proof velvet case and cells in which glasses of an absorption varying in logarithmic degrees are placed. After wearing the no. 8 glasses for ten minutes a normal person can see the bars of a window through them, while a person with night blindness will be unable to do so. Glasses of another number are such that the 20/200 letter of Snellen's chart can be read through them by the normal person after ten minutes' adaptation. Such tests are rather crude and would probably screen out only cases of rather severe night blindness. It is doubted that tests with these glasses would reveal night blindness of mild degree. As far as is known, similar graded lenses are not made in America, but a series of tests on the Snellen chart with ordinary welder's goggles padded carefully to exclude light might establish standards which would be useful. A period of at least ten minutes for adaptation with the glasses on would be advisable.

AMINOPHYLLINE AND MENTAL DISTURBANCE

To the Editor:—For two months I have been treating a man of more than 70 who has been suffering from bronchial asthma for decades. All kinds of treatments have been unsuccessful. The only relief in his heavy attacks is accomplished by (besides occasionally necessary narcotics) intravenous injections of 0.48 Gm. of aminophylline in 20 cc. of physiologic solution of sodium chloride. Is there any danger that these daily injections may lead to other, especially mental, disturbances? His wife told me that recently he often talks incoherently and to himself.

Oskar Ury, M.D., San Francisco.

ANSWER.—There is practically no danger that daily injections of aminophylline will lead to mental disturbance or any other injurious effects. The patient's incoherence may be due to vascular changes due to cerebral arteriosclerosis. Since aminophylline is a vasodilator, it is possible that without the use of this drug symptoms of mental disturbance would be even more severe. Since the dose of aminophylline employed by the inquirer is twice the usual dose, it is suggested that a reduction in the dose may produce equally efficient results.

TYPHOID VACCINE AND SULFANILAMIDE-FAST GONORRHEA

To the Editor:—Is there any rationale to the intramuscular use of a mixed typhoid vaccine in cases of sulfanilamide-resistant, uncomplicated acute or chronic gonorrheal urethritis?

M.D., Tennessee.

ANSWER.—A careful search through the recent literature fails to reveal anything concerning the use of typhoid vaccine in the treatment of gonorrhea as far as sulfanilamide-fast gonorrhea is concerned.